

SEQUENCE LISTING

- <110> Genentech, Inc.
Ashkenazi, Avi
Botstein, David
Desnoyers, Luc
Eaton, Dan L.
Ferrara, Napoleone
Filvaroff, Ellen
Fong, Sherman
Gao, Wei-Qiang
Gerber, Hanspeter
Gerritsen, Mary E.
Goddard, A.
Godowski, Paul J.
Grimaldi, Christopher J.
Gurney, Austin L.
Hillan, Kenneth, J.
Kljavin, Ivar J.
Mather, Jennie P.
Pan, James
Paoni, Nicholas F.
Roy, Margaret Ann
Stewart, Timothy A.
Tumas, Daniel
Williams, P. Mickey
Wood, William, I.
- <120> Secreted and Transmembrane Polypeptides and Nucleic
Acids Encoding the Same
- <130> 10466-14
- <140> 09/665,350
<141> 2000-09-18
- <150> PCT/US00/04414
<151> 2000-02-22
- <150> US 60/143,048
<151> 1999-07-07
- <150> US 60/145,698
<151> 1999-07-26
- <150> US 60/146,222
<151> 1999-07-28
- <150> PCT/US99/20594
<151> 1999-09-08
- <150> PCT/US99/20944
<151> 1999-09-13

<150> PCT/US99/21090
<151> 1999-09-15

<150> PCT/US99/21547
<151> 1999-09-15

<150> PCT/US99/23089
<151> 1999-10-05

<150> PCT/US99/28214
<151> 1999-11-29

<150> PCT/US99/28313
<151> 1999-11-30

<150> PCT/US99/28564
<151> 1999-12-02

<150> PCT/US99/28565
<151> 1999-12-02

<150> PCT/US99/30095
<151> 1999-12-16

<150> PCT/US99/30911
<151> 1999-12-20

<150> PCT/US99/30999
<151> 1999-12-20
<150> PCT/US00/00219
<151> 2000-01-05

<160> 423

<210> 1

<211> 1825

<212> DNA

<213> Homo sapiens

<400> 1

```
actgcacctc ggttctatcg attgaattcc ccgggggatcc tctagagatc cctcgacctc 60
gaccacgcgc tccgggcccgc agcagcacgc ccgcaggacc tggagctccg gctgcgtctt 120
cccgcagcgc taccgcgccat gcgcctgccg cgcggggccg cgctggggct cctgccgctt 180
ctgctgctgc tgccgcccgc gccggaggcc gccaaagaagc cgacgccctg ccaccgggtg 240
cggggggctgg tggacaagtt taaccagggg atggtggaca ccgcaaagaa gaactttggc 300
ggcgggaaca cggcttggga ggaaaagacg ctgtccaagt acgagtccag cgagattcgc 360
ctgctggaga tcctggaggg gctgtgcgag agcagcgact tcgaatgcaa tcagatgcta 420
gaggcgcagg aggagcacct ggaggcctgg tggctgcagc tgaagagcga atatcctgac 480
ttattcgagt ggttttgtgt gaagacactg aaagtgtgct gctctccagg aacctacggt 540
cccgaactgtc tcgcatgcc a gggcggatcc cagaggccct gcagcgggaa tggccactgc 600
agcggagatg ggagcagaca gggcgacggg tcctgccggt gccacatggg gtaccagggc 660
```

```

ccgctgtgca ctgactgcat ggacggctac ttcagctcgc tccggaacga gacccacagc 720
atctgcacag cctgtgacga gtectgcaag acgtgctcgg gcctgaccaa cagagactgc 780
ggcgagtgtg aagtgggctg ggtgctggac gagggcgccct gtgtggatgt ggacgagtgt 840
gcggccgagc cgctccctg cagcgtcgcg cagttctgta agaacgcaa cggctcctac 900
acgtgcgaag agtgtgactc cagctgtgtg ggctgcacag gggaaggccc aggaaactgt 960
aaagagtgtg tctctggcta cgcgaggag caccgacagt gtgcagatgt ggacgagtgc 1020
tcactagcag aaaaaacctg tgtgaggaaa aacgaaaact gctacaatac tccaggaggc 1080
tacgtctgtg tgtgtcctga cggcttcgaa gaaacggaag atgcctgtgt gccgccggca 1140
gaggctgaag ccacagaagg agaaagcccc acacagctgc cctcccgca agacctgtaa 1200
tgtgccggac ttaccttta aattattcag aaggatgtcc cgtggaaaat gtggccctga 1260
ggatgcctgc tcctgcagtg gacagcggcg gggagaggct gcctgctctc taacggttga 1320
ttctcatttg tcccttaaac agctgcattt cttggttgtt cttaaacaga cttgtatatt 1380
ttgatacagt tctttgtaat aaaattgacc attgtaggta atcaggagga aaaaaaaaaa 1440
aaaaaaaaaa aaagggcggc cgcgactcta gactcgacct gcagaagctt ggccgccatg 1500
gccaacttg tttattgcag cttataatgg ttacaaataa agcaatagca tcacaaattt 1560
cacaaataaa gcattttttt cactgcattc tagttgtggt ttgtccaaac tcatcaatgt 1620
atcttatcat gtctggatcg ggaattaatt cggcgcagca ccatggcctg aaataacctc 1680
tgaaagagga acttggttag gtaccttctg aggcggaaaag aaccagctgt ggaatgtgtg 1740
tcagttaggg tgtggaaaag cccagagctc cccagcaggc agaagtatgc aagcatgcat 1800
ctcaattagt cagcaaccca gttttt 1825

```

<210> 2

<211> 353

<212> PRT

<213> Homo sapiens

<400> 2

```

Met Arg Leu Pro Arg Arg Ala Ala Leu Gly Leu Leu Pro Leu Leu Leu
  1              5              10              15

```

```

Leu Leu Pro Pro Ala Pro Glu Ala Ala Lys Lys Pro Thr Pro Cys His
      20              25              30

```

```

Arg Cys Arg Gly Leu Val Asp Lys Phe Asn Gln Gly Met Val Asp Thr
      35              40              45

```

```

Ala Lys Lys Asn Phe Gly Gly Gly Asn Thr Ala Trp Glu Glu Lys Thr
      50              55              60

```

```

Leu Ser Lys Tyr Glu Ser Ser Glu Ile Arg Leu Leu Glu Ile Leu Glu
      65              70              75              80

```

```

Gly Leu Cys Glu Ser Ser Asp Phe Glu Cys Asn Gln Met Leu Glu Ala
      85              90              95

```

```

Gln Glu Glu His Leu Glu Ala Trp Trp Leu Gln Leu Lys Ser Glu Tyr
      100              105              110

```

```

Pro Asp Leu Phe Glu Trp Phe Cys Val Lys Thr Leu Lys Val Cys Cys
      115              120              125

```

```

Ser Pro Gly Thr Tyr Gly Pro Asp Cys Leu Ala Cys Gln Gly Gly Ser
      130              135              140

```

Gln Arg Pro Cys Ser Gly Asn Gly His Cys Ser Gly Asp Gly Ser Arg
 145 150 155 160
 Gln Gly Asp Gly Ser Cys Arg Cys His Met Gly Tyr Gln Gly Pro Leu
 165 170 175
 Cys Thr Asp Cys Met Asp Gly Tyr Phe Ser Ser Leu Arg Asn Glu Thr
 180 185 190
 His Ser Ile Cys Thr Ala Cys Asp Glu Ser Cys Lys Thr Cys Ser Gly
 195 200 205
 Leu Thr Asn Arg Asp Cys Gly Glu Cys Glu Val Gly Trp Val Leu Asp
 210 215 220
 Glu Gly Ala Cys Val Asp Val Asp Glu Cys Ala Ala Glu Pro Pro Pro
 225 230 235 240
 Cys Ser Ala Ala Gln Phe Cys Lys Asn Ala Asn Gly Ser Tyr Thr Cys
 245 250 255
 Glu Glu Cys Asp Ser Ser Cys Val Gly Cys Thr Gly Glu Gly Pro Gly
 260 265 270
 Asn Cys Lys Glu Cys Ile Ser Gly Tyr Ala Arg Glu His Gly Gln Cys
 275 280 285
 Ala Asp Val Asp Glu Cys Ser Leu Ala Glu Lys Thr Cys Val Arg Lys
 290 295 300
 Asn Glu Asn Cys Tyr Asn Thr Pro Gly Ser Tyr Val Cys Val Cys Pro
 305 310 315 320
 Asp Gly Phe Glu Glu Thr Glu Asp Ala Cys Val Pro Pro Ala Glu Ala
 325 330 335
 Glu Ala Thr Glu Gly Glu Ser Pro Thr Gln Leu Pro Ser Arg Glu Asp
 340 345 350
 Leu

<210> 3

<211> 2206

<212> DNA

<213> Homo sapiens

<400> 3

cagggtccaac tgcacctcgg ttctatcgat tgaattcccc ggggatcctc tagagatccc 60
 tcgacctcga cccacgcgtc cgccaggccg ggaggcgacg cgcccagccg tctaaacggg 120
 aacagccctg gctgagggag ctgcagcgca gcagagtatc tgacggcgcc aggttgcgta 180
 ggtgcggcac gaggagtttt cccggcagcg aggaggtcct gagcagcatg gcccggagga 240

ggcgccttccc tgccgcgcgcg ctctggctct ggagcatcct cctgtgcctg ctggcactgc 300
 gggcggaggc cgggcgcgcg caggaggaga gcctgtacct atggatcgat gctcaccagg 360
 caagagtact cataggattt gaagaagata tcttgattgt ttcagagggg aaaatggcac 420
 cttttacaca tgatttcaga aaagcgcaac agagaatgcc agctattcct gtcaatatcc 480
 attccatgaa ttttacctgg caagctgcag ggcaggcaga atacttctat gaattcctgt 540
 ccttgcgctc cctggataaa ggcatcatgg cagatccaac cgtcaatgtc cctctgctgg 600
 gaacagtgcc tcacaaggca tcagttgttc aagttggttt cccatgtctt ggaaaacagg 660
 atgggggtggc agcatttgaa gtggatgtga ttgttatgaa ttctgaaggc aacaccattc 720
 tccaaacacc tcaaaatgct atcttcttta aaacatgtca acaagctgag tgcccaggcg 780
 ggtgccgaaa tggaggcttt tgtaatgaaa gacgcatctg cgagtgtcct gatgggttcc 840
 acggacctca ctgtgagaaa gccctttgta cccacgatg tatgaatggg ggactttgtg 900
 tgactcctgg tttctgcatc tgcccacctg gattctatgg agtgaactgt gacaaagcaa 960
 actgctcaac cacctgcttt aatggaggga cctgtttcta ccctggaaaa tgtatttgcc 1020
 ctccaggact agagggagag cagtgtgaaa tcagcaaatg cccacaacc tgctgaaatg 1080
 gaggtaaatg cattggtaaa agcaaatgta agtgttccaa aggttaccag ggagacctct 1140
 gttcaaagcc tgtctgcgag cctggctgtg gtgcacatgg aacctgccat gaacccaaca 1200
 aatgccaatg tcaagaaggc tggcatggaa gacactgcaa taaaagggtac gaagccagcc 1260
 tcatacatgc cctgaggcca gcaggcgccc agctcaggca gcacacgctt tcaacttaaaa 1320
 aggccgagga gcggcgggat ccacctgaat ccaattacat ctggtgaact ccgacatctg 1380
 aaacgtttta agttacacca agttcatagc ctttgttaac ctttcatgtg ttgaatgttc 1440
 aaataatggt cattacactt aagaatactg gcctgaattt tattagcttc attataaatc 1500
 actgagctga tatttactct tccttttaag ttttctaagt acgtctgtag catgatggta 1560
 tagattttct tgtttcagtg ctttgggaca gattttatat tatgtcaatt gatcagggtta 1620
 aaattttcag tgtgtagtgt gcagatattt tcaaaaattac aatgcattta tgggtgtctgg 1680
 gggcagggga acatcagaaa gggttaaattg ggcaaaaatg cgtaagtcac aagaatttgg 1740
 atgggtgcagt taatgttgaa gttacagcat ttcagatttt attgtcagat atttagatgt 1800
 ttgttacatt tttaaaaatt gctcttaatt tttaaactct caatacaata tattttgacc 1860
 ttaccattat tccagagatt cagtattaaa aaaaaaaaaa ttactactgt gtagtggcat 1920
 ttaaacaata taatatattc taaacacaat gaaataggga atataatgta tgaacttttt 1980
 gcattggctt gaagcaatat aatatattgt aaacaaaaca cagctcttac ctaataaaca 2040
 ttttatactg tttgtatgta taaaataaag gtgctgcttt agtttttttg aaaaaaaaaa 2100
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa gggcggcgcg gactctagag tcgacctgca 2160
 gaagcttggc cgccatggcc caacttgttt attgcagctt ataattg 2206

<210> 4

<211> 379

<212> PRT

<213> Homo sapiens

<400> 4

Met Ala Arg Arg Ser Ala Phe Pro Ala Ala Ala Leu Trp Leu Trp Ser
 1 5 10 15

Ile Leu Leu Cys Leu Leu Ala Leu Arg Ala Glu Ala Gly Pro Pro Gln
 20 25 30

Glu Glu Ser Leu Tyr Leu Trp Ile Asp Ala His Gln Ala Arg Val Leu
 35 40 45

Ile Gly Phe Glu Glu Asp Ile Leu Ile Val Ser Glu Gly Lys Met Ala
 50 55 60

Pro Phe Thr His Asp Phe Arg Lys Ala Gln Gln Arg Met Pro Ala Ile

65		70		75		80
Pro Val Asn Ile His Ser Met Asn Phe Thr Trp Gln Ala Ala Gly Gln						
		85		90		95
Ala Glu Tyr Phe Tyr Glu Phe Leu Ser Leu Arg Ser Leu Asp Lys Gly						
		100		105		110
Ile Met Ala Asp Pro Thr Val Asn Val Pro Leu Leu Gly Thr Val Pro						
		115		120		125
His Lys Ala Ser Val Val Gln Val Gly Phe Pro Cys Leu Gly Lys Gln						
		130		135		140
Asp Gly Val Ala Ala Phe Glu Val Asp Val Ile Val Met Asn Ser Glu						
		145		150		155
Gly Asn Thr Ile Leu Gln Thr Pro Gln Asn Ala Ile Phe Phe Lys Thr						
		165		170		175
Cys Gln Gln Ala Glu Cys Pro Gly Gly Cys Arg Asn Gly Gly Phe Cys						
		180		185		190
Asn Glu Arg Arg Ile Cys Glu Cys Pro Asp Gly Phe His Gly Pro His						
		195		200		205
Cys Glu Lys Ala Leu Cys Thr Pro Arg Cys Met Asn Gly Gly Leu Cys						
		210		215		220
Val Thr Pro Gly Phe Cys Ile Cys Pro Pro Gly Phe Tyr Gly Val Asn						
		225		230		235
Cys Asp Lys Ala Asn Cys Ser Thr Thr Cys Phe Asn Gly Gly Thr Cys						
		245		250		255
Phe Tyr Pro Gly Lys Cys Ile Cys Pro Pro Gly Leu Glu Gly Glu Gln						
		260		265		270
Cys Glu Ile Ser Lys Cys Pro Gln Pro Cys Arg Asn Gly Gly Lys Cys						
		275		280		285
Ile Gly Lys Ser Lys Cys Lys Cys Ser Lys Gly Tyr Gln Gly Asp Leu						
		290		295		300
Cys Ser Lys Pro Val Cys Glu Pro Gly Cys Gly Ala His Gly Thr Cys						
		305		310		315
His Glu Pro Asn Lys Cys Gln Cys Gln Glu Gly Trp His Gly Arg His						
		325		330		335
Cys Asn Lys Arg Tyr Glu Ala Ser Leu Ile His Ala Leu Arg Pro Ala						
		340		345		350

Gly Ala Gln Leu Arg Gln His Thr Pro Ser Leu Lys Lys Ala Glu Glu
 355 360 365

Arg Arg Asp Pro Pro Glu Ser Asn Tyr Ile Trp
 370 375

<210> 5

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 5

agggagcacg gacagtgtgc agatgtggac gagtgtcac tagca

45

<210> 6

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 6

agagtgtatc tctggctacg c

21

<210> 7

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 7

taagtcgagc acattacagg tc

22

<210> 8

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 8

cccacgatgt atgaatggtg gactttgtgt gactcctggt ttctgcatc

49

<210> 9
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 9
 aaagacgcat ctgcgagtgt cc 22

<210> 10
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 10
 tgctgatttc aactgctct ccc 23

<210> 11
 <211> 2197
 <212> DNA
 <213> Homo sapiens

<400> 11
 cggacgcgtg ggcgtccggc ggtcgcagag ccaggaggcg gaggcgcgcg ggccagcctg 60
 ggccccagcc cacaccttca ccagggccca ggagccacca tgtggcgatg tccactgggg 120
 ctactgctgt tgctgccgct ggctggccac ttggctctgg gtgccagca gggctcgtggg 180
 cgccgggagc tagcacccgg tctgcacctg cggggcatcc gggacgcggg aggccgggtac 240
 tgccaggagc aggacctgtg ctgccgcggc cgtgccgacg actgtgccct gccctacctg 300
 ggcgccatct gttactgtga cctcttctgc aaccgcacgg tctccgactg ctgccctgac 360
 ttctgggact tctgcctcgg cgtgccaccc ccttttcccc cgatccaagg atgtatgcat 420
 ggaggtcgta tctatccagt cttgggaacg tactgggaca actgtaaccg ttgcacctgc 480
 caggagaaca ggcagtggca tgggtgatcc agacatgatc aaagccatca accagggcaa 540
 ctatggctgg caggctggga accacagcgc cttctggggc atgacctgg atgagggcat 600
 tcgctaccgc ctgggcacca tccgcccata ttctcgggtc atgaacatgc atgaaattta 660
 tacagtgtcg aaccacgggg aggtgcttcc cacagccttc gaggcctctg agaagtggcc 720
 caacctgatt catgagcctc ttgaccaagg caactgtgca ggctcctggg ccttctccac 780
 agcagctgtg gcatccgata gtgtctcaat ccattctctg ggacacatga cgctgtcct 840
 gtgcgccag aacctgctgt cttgtgacac ccaccagcag cagggtgcc gcggtgggcg 900
 tctcgatggg gcttgggtgt tcttgcgtcg ccgaggggtg gtgtctgacc actgctaccc 960
 cttctcgggc cgtgaacgag acgaggctgg ccctgcgccc ccctgtatga tgcacagccg 1020
 agccatgggt cggggcaagc gccaggccac tgcccactgc cccaacagct atgttaataa 1080
 caatgacatc taccaggtca ctctgtcta ccgcctcggc tccaacgaca aggagatcat 1140
 gaaggagctg atggagaatg gccctgtcca agccctcatg gaggtgcatg aggacttctt 1200
 cctatacaag ggaggcatct acagccacac gccagtgagc cttgggaggc cagagagata 1260
 ccgcgcgcat gggacccact cagtcaagat cacaggatgg ggagaggaga cgctgccaga 1320

```

tggaaggacg ctcaaatact ggactgcggc caactcctgg ggcccagcct ggggcgagag 1380
gggccacttc cgcacgtgc gcggcgtcaa tgagtgcgac atcgagagct tcgtgctggg 1440
cgtctggggc cgcgtgggca tggaggacat gggcatcac tgaggctgcg ggcaccacgc 1500
ggggtccggc ctgggatcca ggctaagggc cggcggaaga ggccccaatg gggcggtgac 1560
cccagcctcg cccgacagag cccggggcgc aggcgggcgc cagggcgcta atcccggcgc 1620
gggttcgct gacgcagcgc cccgcctggg agccgcgggc aggcgagact ggcggagccc 1680
ccagacctcc cagtggggac ggggcagggc ctggcctggg aagagcacag ctgcagatcc 1740
caggcctctg gcgccccac tcaagactac caaagccagg acacctcaag tctccagccc 1800
caatacccca ccccaatccc gtattctttt tttttttttt ttagacaggg tcttgcctcg 1860
ttgcccaggt tggagtgcag tggcccatca gggctcactg taacctccga ctctggggtt 1920
caagtgacct tcccacctca gcctctcaag tagctgggac tacaggtgca ccaccacacc 1980
tggttaattt ttgtattttt tgtaaagagg ggggtctcac tgtgttgccc aggctgggtt 2040
cgaactcctg ggctcaagcg gtccacctgc ctccgcctcc caaagtgtcg ggattgcagg 2100
catgagccac tgcaccagc cctgtattct tattcttcag atatttattt ttcttttcac 2160
tgttttaaaa taaaaccaa gtattgataa aaaaaa 2197

```

<210> 12

<211> 164

<212> PRT

<213> Homo sapiens

<400> 12

```

Met Trp Arg Cys Pro Leu Gly Leu Leu Leu Leu Leu Pro Leu Ala Gly
  1              5              10              15

```

```

His Leu Ala Leu Gly Ala Gln Gln Gly Arg Gly Arg Arg Glu Leu Ala
      20              25              30

```

```

Pro Gly Leu His Leu Arg Gly Ile Arg Asp Ala Gly Gly Arg Tyr Cys
      35              40              45

```

```

Gln Glu Gln Asp Leu Cys Cys Arg Gly Arg Ala Asp Asp Cys Ala Leu
      50              55              60

```

```

Pro Tyr Leu Gly Ala Ile Cys Tyr Cys Asp Leu Phe Cys Asn Arg Thr
      65              70              75              80

```

```

Val Ser Asp Cys Cys Pro Asp Phe Trp Asp Phe Cys Leu Gly Val Pro
      85              90              95

```

```

Pro Pro Phe Pro Pro Ile Gln Gly Cys Met His Gly Gly Arg Ile Tyr
      100             105             110

```

```

Pro Val Leu Gly Thr Tyr Trp Asp Asn Cys Asn Arg Cys Thr Cys Gln
      115             120             125

```

```

Glu Asn Arg Gln Trp His Gly Gly Ser Arg His Asp Gln Ser His Gln
      130             135             140

```

```

Pro Gly Gln Leu Trp Leu Ala Gly Trp Glu Pro Gln Arg Leu Leu Gly
      145             150             155             160

```

His Asp Pro Gly

<210> 13
 <211> 533
 <212> DNA
 <213> Homo sapiens

<220>
 <221> modified_base
 <222> (33)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (80)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (94)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (144)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (188)
 <223> a, t, c or g

<400> 13
 aggctccttg gccctttttc cacagcaagc ttntgcnatc ccgattcgtt gtctcaaatac 60
 caattctctt gggacacatn acgcctgtcc ttngcccga gaacctgctg tcttgtaacac 120
 ccaccagcag cagggctgcc gcgntgggag tctcgatggg gcctggtggt tcttgctgctg 180
 ccgagggntg gtgtctgacc actgctaccc cttctcgggc cgtgaacgag acgaggctgg 240
 ccctgcgccc ccctgtatga tgcacagccg agccatgggt cggggcaagc gccaggccac 300
 tgcccactgc cccaacagct atgttaataa caatgacatc taccaggtca ctctgtcta 360
 ccgcctcggc tccaacgaca aggagatcat gaaggagctg atggagaatg gccctgtcca 420
 agccctcatg gaggtgcatg aggacttctt cctatacaag ggaggcatct acagccacac 480
 gccagtgagc cttggggaggc cagagagata ccgccggcat gggaccact cag 533

<210> 14
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 14

ttcgaggcct ctgagaagtg gccc

24

<210> 15

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 15

ggcggatatct ctctggcctc cc

22

<210> 16

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 16

ttctccacag cagctgtggc atccgatcgt gtctcaatcc attctctggg

50

<210> 17

<211> 960

<212> DNA

<213> Homo sapiens

<400> 17

gctgcttgcc ctgttgatgg caggcttggc cctgcagcca ggcactgccc tgctgtgcta 60
ctcctgcaaa gcccagggtga gcaacgagga ctgcctgcag gtggagaact gcacccagct 120
gggggagcag tgctggaccg cgcgcacccg cgcagttggc ctccctgaccg tcatcagcaa 180
aggctgcagc ttgaactgcg tggatgactc acaggactac tacgtgggca agaagaacat 240
cacgtgctgt gacaccgact tgtgcaacgc cagcggggcc catgcctgc agccggctgc 300
cgccatcctt gcgtgctcc ctgcactcgg cctgctgctc tggggaccg gccagctata 360
ggctctgggg ggccccgctg cagccacac tgggtgtggt gccccaggcc tctgtgccac 420
tcctcacaga cctggcccag tgggagcctg tcctggttcc tgaggcacat cctaacgcaa 480
gtctgaccat gtatgtctgc acccctgtcc cccaccctga cctcccatg gccctctcca 540
ggactccac ccggcagatc agctctagt acacagatcc gcctgcagat ggccccctcca 600
accctctctg ctgctgttcc catggcccag cattctccac ccttaaccct gtgctcaggc 660
acctcttccc ccaggaagcc ttccctgccc accccatcta tgacttgagc cagggtctggt 720
ccgtgggtgc ccccgacccc agcaggggac aggcactcag gaggggccag taaaggctga 780
gatgaagtgg actgagtaga actggaggac aagagtcgac gtgagttcct gggagtctcc 840
agagatgggg cctggaggcc tggaggaagg ggccaggcct cacattcgtg gggctccctg 900
aatggcagcc tgagcacagc gtaggcctt aataaacacc tgttggataa gccaaaaaaa 960

<210> 18

<211> 189

<212> PRT

<213> Homo sapiens

<400> 18

Met Thr His Arg Thr Thr Thr Trp Ala Arg Arg Thr Ser Arg Ala Val
 1 5 10 15

Thr Pro Thr Cys Ala Thr Pro Ala Gly Pro Met Pro Cys Ser Arg Leu
 20 25 30

Pro Pro Ser Leu Arg Cys Ser Leu His Ser Ala Cys Cys Ser Gly Asp
 35 40 45

Pro Ala Ser Tyr Arg Leu Trp Gly Ala Pro Leu Gln Pro Thr Leu Gly
 50 55 60

Val Val Pro Gln Ala Ser Val Pro Leu Leu Thr Asp Leu Ala Gln Trp
 65 70 75 80

Glu Pro Val Leu Val Pro Glu Ala His Pro Asn Ala Ser Leu Thr Met
 85 90 95

Tyr Val Cys Thr Pro Val Pro His Pro Asp Pro Pro Met Ala Leu Ser
 100 105 110

Arg Thr Pro Thr Arg Gln Ile Ser Ser Ser Asp Thr Asp Pro Pro Ala
 115 120 125

Asp Gly Pro Ser Asn Pro Leu Cys Cys Cys Phe His Gly Pro Ala Phe
 130 135 140

Ser Thr Leu Asn Pro Val Leu Arg His Leu Phe Pro Gln Glu Ala Phe
 145 150 155 160

Pro Ala His Pro Ile Tyr Asp Leu Ser Gln Val Trp Ser Val Val Ser
 165 170 175

Pro Ala Pro Ser Arg Gly Gln Ala Leu Arg Arg Ala Gln
 180 185

<210> 19

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 19

tgctgtgcta ctctgcaaa gccc

<210> 20

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 20

tgcacaagtc ggtgtcacag cacg

24

<210> 21

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 21

agcaacgagg actgcctgca ggtggagaac tgcacccagc tggg

44

<210> 22

<211> 1200

<212> DNA

<213> Homo sapiens

<400> 22

```

cccacgcgtc cgaacctctc cagcgatggg agccgccgcg ctgctgcccc acctcactct 60
gtgcttacag ctgctgattc tctgctgtca aactcagtag gtgagggacc agggcgccat 120
gaccgaccag ctgagcaggg ggcagatccg cgagtaccaa ctctacagca ggaccagtgg 180
caagcacgtg caggtcaccg ggcgtcgcgt ctccgccacc gccgaggacg gcaacaagtt 240
tgccaagctc atagtggaga cggacacgtt tggcagcccg gttcgcatca aaggggctga 300
gagtgagaag tacatctgta tgaacaagag gggcaagctc atcgggaagc ccagcgggaa 360
gagcaaagac tgcgtgttca cggagatcgt gctggagaac aactatacgg ccttcagaa 420
cgcccgccac gagggctggt tcatggcctt cacgcggcag gggcgcccc gccaggcttc 480
ccgcagccgc cagaaccagc gcgagggcca ctcatcaag cgctctacc aaggccagct 540
gcccttcccc aaccacgccg agaagcagaa gcagttcgag tttgtgggct ccgccccac 600
ccgccggacc aagcgcacac ggcggcccca gccctcacg tagtctggga ggcagggggc 660
agcagccctt gggccgctc cccaccctt tcccttctta atccaaggac tgggctgggg 720
tggcgggagg ggagccagat ccccgaggga ggaccctgag ggccgcgaag catccagacc 780
cccagctggg aaggggcagg ccggtgcccc aggggcggct ggcacagtgc ccccttcccg 840
gacgggtggc agggcctgga gaggaactga gtgtcacctt gatctcagga caccagcctc 900
tgccggcctc ccagccgggc tcctgaagcc cgctgaaagg tcagcgactg aaggccttgc 960
agacaaccgt ctggaggtgg ctgtcctcaa aatctgcttc tcggatctcc ctcagctctg 1020
ccccagcccc caaactctc ctggctagac tgtaggaagg gacttttgtt tgtttgtttg 1080
tttcaggaaa aaagaaaggg agagagagga aaatagaggg ttgtocactc ctcacattcc 1140
acgacccagg cctgcacccc acccccaact ccagccccg gaataaaacc attttctctg 1200

```

<210> 23

<211> 205

<212> PRT

<213> Homo sapiens

<400> 23

Met Gly Ala Ala Arg Leu Leu Pro Asn Leu Thr Leu Cys Leu Gln Leu
 1 5 10 15

Leu Ile Leu Cys Cys Gln Thr Gln Tyr Val Arg Asp Gln Gly Ala Met
 20 25 30

Thr Asp Gln Leu Ser Arg Arg Gln Ile Arg Glu Tyr Gln Leu Tyr Ser
 35 40 45

Arg Thr Ser Gly Lys His Val Gln Val Thr Gly Arg Arg Ile Ser Ala
 50 55 60

Thr Ala Glu Asp Gly Asn Lys Phe Ala Lys Leu Ile Val Glu Thr Asp
 65 70 75 80

Thr Phe Gly Ser Arg Val Arg Ile Lys Gly Ala Glu Ser Glu Lys Tyr
 85 90 95

Ile Cys Met Asn Lys Arg Gly Lys Leu Ile Gly Lys Pro Ser Gly Lys
 100 105 110

Ser Lys Asp Cys Val Phe Thr Glu Ile Val Leu Glu Asn Asn Tyr Thr
 115 120 125

Ala Phe Gln Asn Ala Arg His Glu Gly Trp Phe Met Ala Phe Thr Arg
 130 135 140

Gln Gly Arg Pro Arg Gln Ala Ser Arg Ser Arg Gln Asn Gln Arg Glu
 145 150 155 160

Ala His Phe Ile Lys Arg Leu Tyr Gln Gly Gln Leu Pro Phe Pro Asn
 165 170 175

His Ala Glu Lys Gln Lys Gln Phe Glu Phe Val Gly Ser Ala Pro Thr
 180 185 190

Arg Arg Thr Lys Arg Thr Arg Arg Pro Gln Pro Leu Thr
 195 200 205

<210> 24

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 24

cagtacgtga gggaccaggg cgccatga

28

<210> 25

<211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 25
 ccggtgacct gcacgtgctt gccca 24

<210> 26
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<220>
 <221> modified_base
 <222> (21)
 <223> a, t, c or g

<400> 26
 gcggatctgc cgctgctca nctggtcggt catggcgccc t 41

<210> 27
 <211> 2479
 <212> DNA
 <213> Homo sapiens

<400> 27
 acttgccatc acctgttgcc agtgtggaaa aattctccct gttgaatttt ttgcacatgg 60
 aggacagcag caaagagggc aacacaggct gataagacca gagacagcag ggagattatt 120
 ttaccatacg ccttcaggac gttccctcta gctggagttc tggacttcaa cagaacccca 180
 tccagtcatt ttgattttgc tgtttatfff ttttttcttt ttctttttcc caccacattg 240
 tattttatff ccttacttca gaaatgggccc tacagaccac aaagtggccc agccatgggg 300
 cttttttcct gaagtcttgg cttatcattt ccctggggct ctactcacag gtgtccaaac 360
 tcctggcctg ccctagtgtg tgccgctgctg acaggaactt tgtctactgt aatgagcgaa 420
 gcttgacctc agtgcctctt gggatcccgg agggcgtaac cgtactctac ctccacaaca 480
 accaaattaa taatgctgga tttcctgcag aactgcacaa tgtacagtgc gtgcacacgg 540
 tctacctgta tggcaaccaa ctggacgaat tccccatgaa ccttcccaag aatgtcagag 600
 ttctccattt gcaggaaaac aatattcaga ccattttcacg ggctgctctt gccagctct 660
 tgaagcttga agagctgcac ctggatgaca actccatata cacagtgggg gtggaagacg 720
 gggccttccg ggaggctatt agcctcaaata tgttgttttt gtctaagaat cacctgagca 780
 gtgtgcctgt tgggcttcct gtggacttgc aagagctgag agtggatgaa aatcgaattg 840
 ctgtcatatc cgacatggcc ttccagaatc tcacgagctt ggagcgtctt attgtggacg 900
 ggaacctcct gaccaacaag ggtatcgccg agggcacctt cagccatctc accaagctca 960
 aggaattttc aattgtacgt aattcgtctg cccacctcc tcccgatctc ccaggtagcg 1020
 atctgatcag gctctatttg caggacaacc agataaacca cattcctttg acagccttct 1080
 caaatctgct taagctggaa cggctggata tatccaacaa ccaactgcgg atgctgactc 1140

```

aagggggtttt tgataatctc tccaacctga agcagctcac tgctcggaat aacccttggt 1200
tttgtgactg cagtattaaa tgggtcacag aatgggtcaa atatatccct tcatctctca 1260
acgtgcggggg tttcatgtgc caaggctctg aacaagtccg ggggatggcc gtcaggggaat 1320
taaatatgaa tcttttgtcc tgtcccacca cgacccccgg cctgcctctc ttcaccccag 1380
ccccaagtac agctttctccg accactcagc ctcccaccct ctctattcca aaccctagca 1440
gaagctacac gcctccaact cctaccacat cgaaacttcc cacgattcct gactgggatg 1500
gcagagaaaag agtgacccca cctatttctg aacggatcca gctctctatc cattttgtga 1560
atgatacttc cattcaagtc agctggctct ctctcttcac cgtgatggca tacaaaactca 1620
catgggtgaa aatggggccac agtttagtag ggggcatcgt tcaggagcgc atagtcagcg 1680
gtgagaagca acacctgagc ctggttaact tagagccccg atccacctat cggatttgtt 1740
tagtgccact ggatgctttt aactaccgcg cggtagaaga caccatttgt tcagaggcca 1800
ccacccatgc ctctatctg aacaacggca gcaacacagc gtccagccat gagcagacga 1860
cgtcccacag catgggctcc ccttttctgc tggcgggctt gatcgggggc gcggtgatat 1920
ttgtgctggt ggtcttctgc agcgtctttt gctggcatat gcacaaaaag gggcgctaca 1980
cctcccagaa gtggaaatac aaccggggcc ggcggaaaga tgattattgc gaggcaggca 2040
ccaagaagga caactccatc ctggagatga cagaaaccag ttttcagatc gtctccttaa 2100
ataacgatca actccttaaa ggagatttca gactgcagcc catttacacc ccaaattggg 2160
gcattaatta cacagactgc catatcccca acaacatgcg atactgcaac agcagcgtgc 2220
cagacctgga gcactgccat acgtgacagc cagaggccca gcgttatcaa ggcggacaat 2280
tagactcttg agaacacact cgtgtgtgca cataaagaca cgcagattac atttgataaa 2340
tgttacacag atgcatttgt gcatttgaat actctgtaat ttatacgggtg tactatataa 2400
tgggatttaa aaaaagtgc atcttttcta tttcaagtta attacaaaca gttttgtaac 2460
tctttgcttt ttaaattctt                                     2479

```

<210> 28

<211> 660

<212> PRT

<213> Homo sapiens

<400> 28

```

Met Gly Leu Gln Thr Thr Lys Trp Pro Ser His Gly Ala Phe Phe Leu
  1                      5                      10          15

```

```

Lys Ser Trp Leu Ile Ile Ser Leu Gly Leu Tyr Ser Gln Val Ser Lys
          20                      25          30

```

```

Leu Leu Ala Cys Pro Ser Val Cys Arg Cys Asp Arg Asn Phe Val Tyr
          35                      40          45

```

```

Cys Asn Glu Arg Ser Leu Thr Ser Val Pro Leu Gly Ile Pro Glu Gly
          50                      55          60

```

```

Val Thr Val Leu Tyr Leu His Asn Asn Gln Ile Asn Asn Ala Gly Phe
          65                      70          75          80

```

```

Pro Ala Glu Leu His Asn Val Gln Ser Val His Thr Val Tyr Leu Tyr
          85                      90          95

```

```

Gly Asn Gln Leu Asp Glu Phe Pro Met Asn Leu Pro Lys Asn Val Arg
          100                      105          110

```

```

Val Leu His Leu Gln Glu Asn Asn Ile Gln Thr Ile Ser Arg Ala Ala
          115                      120          125

```

Leu Ala Gln Leu Leu Lys Leu Glu Glu Leu His Leu Asp Asp Asn Ser
 130 135 140
 Ile Ser Thr Val Gly Val Glu Asp Gly Ala Phe Arg Glu Ala Ile Ser
 145 150 155 160
 Leu Lys Leu Leu Phe Leu Ser Lys Asn His Leu Ser Ser Val Pro Val
 165 170 175
 Gly Leu Pro Val Asp Leu Gln Glu Leu Arg Val Asp Glu Asn Arg Ile
 180 185 190
 Ala Val Ile Ser Asp Met Ala Phe Gln Asn Leu Thr Ser Leu Glu Arg
 195 200 205
 Leu Ile Val Asp Gly Asn Leu Leu Thr Asn Lys Gly Ile Ala Glu Gly
 210 215 220
 Thr Phe Ser His Leu Thr Lys Leu Lys Glu Phe Ser Ile Val Arg Asn
 225 230 235 240
 Ser Leu Ser His Pro Pro Pro Asp Leu Pro Gly Thr His Leu Ile Arg
 245 250 255
 Leu Tyr Leu Gln Asp Asn Gln Ile Asn His Ile Pro Leu Thr Ala Phe
 260 265 270
 Ser Asn Leu Arg Lys Leu Glu Arg Leu Asp Ile Ser Asn Asn Gln Leu
 275 280 285
 Arg Met Leu Thr Gln Gly Val Phe Asp Asn Leu Ser Asn Leu Lys Gln
 290 295 300
 Leu Thr Ala Arg Asn Asn Pro Trp Phe Cys Asp Cys Ser Ile Lys Trp
 305 310 315 320
 Val Thr Glu Trp Leu Lys Tyr Ile Pro Ser Ser Leu Asn Val Arg Gly
 325 330 335
 Phe Met Cys Gln Gly Pro Glu Gln Val Arg Gly Met Ala Val Arg Glu
 340 345 350
 Leu Asn Met Asn Leu Leu Ser Cys Pro Thr Thr Thr Pro Gly Leu Pro
 355 360 365
 Leu Phe Thr Pro Ala Pro Ser Thr Ala Ser Pro Thr Thr Gln Pro Pro
 370 375 380
 Thr Leu Ser Ile Pro Asn Pro Ser Arg Ser Tyr Thr Pro Pro Thr Pro
 385 390 395 400
 Thr Thr Ser Lys Leu Pro Thr Ile Pro Asp Trp Asp Gly Arg Glu Arg

<210>	29
<211>	21
<212>	DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 29

cggtctacct gtatggcaac c

21

<210> 30

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 30

gcaggacaac cagataaacc ac

22

<210> 31

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 31

acgcagattt gagaaggctg tc

22

<210> 32

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 32

ttcacgggct gctcttgccc agctcttgaa gcttgaagag ctgcac

46

<210> 33

<211> 3449

<212> DNA

<213> Homo sapiens

<400> 33

acttgagca agcggcggcg gcggagacag aggcagaggc agaagctggg gctccgtcct 60
cgctccac gagcgatccc cgaggagagc cgcggccctc ggcgaggcga agaggccgac 120

gaggaagacc cgggtggctg cgcacctgcc tcgcttccca ggcgcggcg gctgcagcct 180
 tgccccctctt gctcgcccttg aaaatggaaa agatgctcgc aggcctgctt ctgctgatcc 240
 tcggacagat cgtcctcctc cctgcccagg ccagggagcg gtcacgtggg aggtccatct 300
 ctagggggcag acacgctcgg acccaccgc agacggccct tctggagagt tctgtgaga 360
 acaagcgggc agacctggtt ttcattcatt acagctctcg cagtgtcaac acccatgact 420
 atgcaaaggt caaggagttc atcgtggaca tcttgcaatt cttggacatt ggtcctgatg 480
 tcacccgagt gggcctgctc caatatggca gcactgtcaa gaatgagttc tccctcaaga 540
 ccttcaagag gaagtcgag gtggagcgtg ctgtcaagag gatgcggcat ctgtccacgg 600
 gcacccatgac tgggctggcc atccagtatg ccctgaacat cgcattctca gaagcagagg 660
 gggcccggcc cctgagggag aatgtgccac gggtcataat gatcgtgaca gatgggagac 720
 ctccaggactc cgtggccgag gtggctgcta aggcacggga cacgggcatc ctaatctttg 780
 ccattggtgt gggccaggta gacttcaaca ccttgaagtc cattgggagt gagccccatg 840
 aggaccatgt cttccttgtg gccaatttca gccagattga gacgtgacc tccgtgttcc 900
 agaagaagtt gtgcacggcc cacatgtgca gcacctgga gcataactgt gccacttct 960
 gcatcaacat ccttggtcctc tacgtctgca ggtgcaaaa aggctacatt ctcaactcgg 1020
 atcagacgac ttgcagaatc caggatctgt gtgccatgga ggaccacaac tgtgagcagc 1080
 tctgtgtgaa tgtgccgggc tcttcgtct gccagtgtca cagtggctac gccctggctg 1140
 aggatgggaa gaggtgtgtg gctgtggact actgtgcctc agaaaaccac ggatgtgaac 1200
 atgagtgtgt aaatgctgat ggctcctacc tttgccagtg ccatgaagga tttgctctta 1260
 acccagatga aaaaacgtgc acaaggatca actactgtgc actgaacaaa ccgggctgtg 1320
 agcatgagtg cgtcaacatg gaggagagct actactgccg ctgccaccgt ggctacactc 1380
 tggaccccaa tggcaaaacc tgcagccgag tggaccactg tgcacagcag gaccatggct 1440
 gtgagcagct gtgtctgaac accgaggatt ccttcgtctg ccagtgtctc gaaggcttcc 1500
 tcatcaacga ggacctcaag accctgctcc ggggtggatta ctgcctgctg agtgaccatg 1560
 gttgtgaata ctctgtgtc aacatggaca gatcctttgc ctgtcagttg cctgagggac 1620
 acgtgtctccg cagcgtggg aagacgtgtg caaaattgga ctcttgtgtc ctgggggacc 1680
 acggttgtga acattcgtgt gtaagcagtg aagattcgtt tgtgtgccag tgctttgaag 1740
 gttatatact ccgtgaagat ggaaaaacct gcagaaggaa agatgtctgc caagctatag 1800
 accatggctg tgaacacatt tgtgtgaaca gtgacgactc atacacgtgc gagtgtctgg 1860
 agggattccg gctcgtgag gatgggaaac gctgccgaag gaaggatgtc tgcaaatcaa 1920
 cccaccatgg ctgcgaacac atttgtgtta ataattggaa ttcctacatc tgcaaatgct 1980
 cagagggatt tgttctagct gaggacggaa gacggtgcaa gaaatgcact gaaggcccaa 2040
 ttgacctggt ctttgtgatc gatggatcca agagtcttgg agaagagaat tttgaggtcg 2100
 tgaagcagtt tgtcactgga attatagatt ccttgacaat tcccccaaa gccgctcgag 2160
 tggggctgct ccagtattcc acacagggtc acacagagtt cactctgaga aacttcaact 2220
 cagccaaaga catgaaaaaa gccgtggccc acatgaaata catgggaaag ggctctatga 2280
 ctgggctggc cctgaaacac atgtttgaga gaagttttac ccaaggagaa ggggccaggc 2340
 cctttccac aagggtgccc agagcagcca ttgtgttcac cgacggacgg gctcaggatg 2400
 acgtctccga gtggccaggt aaagccaagg ccaatgggtat cactatgtat gctgttggg 2460
 taggaaaagc cattgaggag gaactacaag agattgcctc tgagcccaca aacaagcatc 2520
 tcttctatgc cgaagacttc agcacaatgg atgagataag tgaaaaactc aagaaaggca 2580
 tctgtgaagc tctagaagac tccgatggaa gacaggactc tccagcaggg gaactgccaa 2640
 aaacggtcca acagccaaca gaatctgagc cagtcccat aaatatcaa gacctacttt 2700
 cctgttctaa ttttgagtg caacacagat atctgtttga agaagacaat cttttacgg 2760
 ctacacaaaa gctttcccat tcaacaaaac cttcaggaag ccttttgaa gaaaaacacg 2820
 atcaatgcaa atgtgaaaac cttataatgt tccagaacct tgcaaacgaa gaagtaagaa 2880
 aattaacaca gcgcttagaa gaaatgacac agagaatgga agccctggaa aatcgccctga 2940
 gatacagatg aagattagaa atcgcgacac atttgtagtc attgtatcac ggattacaat 3000
 gaacgcagtg cagagcccca aagctcaggc tattgttaaa tcaataatgt tgtgaagtaa 3060
 aacaatcagt actgagaac ctggtttgcc acagaacaaa gacaagaagt atacactaac 3120
 ttgtataaat ttatctagga aaaaaatcct tcagaattct aagatgaatt taccaggtga 3180
 gaatgaataa gctatgcaag gtattttgta atatactgtg gacacaactt gcttctgcct 3240
 catcctgcct tagtgtgcaa tctcatttga ctatacgata aagtttgcac agtcttactt 3300

ctgtagaaca ctggccatag gaaatgctgt tttttgtac tggactttac cttgatatat 3360
 gtatatggat gtatgcataa aatcatagga catatgtact tgtggaacaa gttggatttt 3420
 ttatacaata ttaaaattca ccacttcag 3449

<210> 34

<211> 915

<212> PRT

<213> Homo sapiens

<400> 34

Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile
 1 5 10 15

Val Leu Leu Pro Ala Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile
 20 25 30

Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu
 35 40 45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser
 50 55 60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile
 65 70 75 80

Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val
 85 90 95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys
 100 105 110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg
 115 120 125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu
 130 135 140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn
 145 150 155 160

Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser
 165 170 175

Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe
 180 185 190

Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly
 195 200 205

Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln
 210 215 220

Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His

225		230		235		240
Met Cys Ser Thr	Leu Glu His Asn Cys	Ala His Phe Cys	Ile Asn Ile			
	245	250	255			
Pro Gly Ser Tyr	Val Cys Arg Cys	Lys Gln Gly Tyr	Ile Leu Asn Ser			
	260	265	270			
Asp Gln Thr Thr	Cys Arg Ile Gln Asp	Leu Cys Ala Met	Glu Asp His			
	275	280	285			
Asn Cys Glu Gln	Leu Cys Val Asn Val	Pro Gly Ser Phe	Val Cys Gln			
	290	295	300			
Cys Tyr Ser Gly	Tyr Ala Leu Ala Glu Asp	Gly Lys Arg Cys	Val Ala			
305	310	315	320			
Val Asp Tyr Cys	Ala Ser Glu Asn His	Gly Cys Glu His	Glu Cys Val			
	325	330	335			
Asn Ala Asp Gly	Ser Tyr Leu Cys Gln Cys	His Glu Gly Phe	Ala Leu			
	340	345	350			
Asn Pro Asp Glu	Lys Thr Cys Thr Arg Ile	Asn Tyr Cys Ala	Leu Asn			
	355	360	365			
Lys Pro Gly Cys	Glu His Glu Cys Val Asn Met	Glu Glu Ser Tyr	Tyr			
	370	375	380			
Cys Arg Cys His	Arg Gly Tyr Thr Leu Asp	Pro Asn Gly Lys	Thr Cys			
385	390	395	400			
Ser Arg Val Asp	His Cys Ala Gln Gln Asp	His Gly Cys Glu	Gln Leu			
	405	410	415			
Cys Leu Asn Thr	Glu Asp Ser Phe Val Cys	Gln Cys Ser Glu	Gly Phe			
	420	425	430			
Leu Ile Asn Glu	Asp Leu Lys Thr Cys Ser	Arg Val Asp Tyr	Cys Leu			
	435	440	445			
Leu Ser Asp His	Gly Cys Glu Tyr Ser Cys	Val Asn Met Asp	Arg Ser			
	450	455	460			
Phe Ala Cys Gln	Cys Pro Glu Gly His Val	Leu Arg Ser Asp	Gly Lys			
465	470	475	480			
Thr Cys Ala Lys	Leu Asp Ser Cys Ala Leu	Gly Asp His Gly	Cys Glu			
	485	490	495			
His Ser Cys Val	Ser Ser Glu Asp Ser Phe	Val Cys Gln Cys	Phe Glu			
	500	505	510			

Gly Tyr Ile Leu Arg Glu Asp Gly Lys Thr Cys Arg Arg Lys Asp Val
 515 520 525
 Cys Gln Ala Ile Asp His Gly Cys Glu His Ile Cys Val Asn Ser Asp
 530 535 540
 Asp Ser Tyr Thr Cys Glu Cys Leu Glu Gly Phe Arg Leu Ala Glu Asp
 545 550 555 560
 Gly Lys Arg Cys Arg Arg Lys Asp Val Cys Lys Ser Thr His His Gly
 565 570 575
 Cys Glu His Ile Cys Val Asn Asn Gly Asn Ser Tyr Ile Cys Lys Cys
 580 585 590
 Ser Glu Gly Phe Val Leu Ala Glu Asp Gly Arg Arg Cys Lys Lys Cys
 595 600 605
 Thr Glu Gly Pro Ile Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser
 610 615 620
 Leu Gly Glu Glu Asn Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile
 625 630 635 640
 Ile Asp Ser Leu Thr Ile Ser Pro Lys Ala Ala Arg Val Gly Leu Leu
 645 650 655
 Gln Tyr Ser Thr Gln Val His Thr Glu Phe Thr Leu Arg Asn Phe Asn
 660 665 670
 Ser Ala Lys Asp Met Lys Lys Ala Val Ala His Met Lys Tyr Met Gly
 675 680 685
 Lys Gly Ser Met Thr Gly Leu Ala Leu Lys His Met Phe Glu Arg Ser
 690 695 700
 Phe Thr Gln Gly Glu Gly Ala Arg Pro Leu Ser Thr Arg Val Pro Arg
 705 710 715 720
 Ala Ala Ile Val Phe Thr Asp Gly Arg Ala Gln Asp Asp Val Ser Glu
 725 730 735
 Trp Ala Ser Lys Ala Lys Ala Asn Gly Ile Thr Met Tyr Ala Val Gly
 740 745 750
 Val Gly Lys Ala Ile Glu Glu Glu Leu Gln Glu Ile Ala Ser Glu Pro
 755 760 765
 Thr Asn Lys His Leu Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp Glu
 770 775 780
 Ile Ser Glu Lys Leu Lys Lys Gly Ile Cys Glu Ala Leu Glu Asp Ser
 785 790 795 800

Asp Gly Arg Gln Asp Ser Pro Ala Gly Glu Leu Pro Lys Thr Val Gln
 805 810 815

Gln Pro Thr Glu Ser Glu Pro Val Thr Ile Asn Ile Gln Asp Leu Leu
 820 825 830

Ser Cys Ser Asn Phe Ala Val Gln His Arg Tyr Leu Phe Glu Glu Asp
 835 840 845

Asn Leu Leu Arg Ser Thr Gln Lys Leu Ser His Ser Thr Lys Pro Ser
 850 855 860

Gly Ser Pro Leu Glu Glu Lys His Asp Gln Cys Lys Cys Glu Asn Leu
 865 870 875 880

Ile Met Phe Gln Asn Leu Ala Asn Glu Glu Val Arg Lys Leu Thr Gln
 885 890 895

Arg Leu Glu Glu Met Thr Gln Arg Met Glu Ala Leu Glu Asn Arg Leu
 900 905 910

Arg Tyr Arg
 915

<210> 35

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 35

gtgaccctgg ttgtgaatac tcc

23

<210> 36

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 36

acagccatgg tctatagctt gg

22

<210> 37

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 37

gcctgtcagt gtcctgaggg acacgtgctc cgcagc gatg ggaag

45

<210> 38

<211> 1813

<212> DNA

<213> Homo sapiens

<400> 38

```

ggagccgccc tgggtgtcag cggctcggct cccgcgcacg ctccggccgt cgcgcagcct 60
cggcacctgc aggtccgtgc gtcccgcggc tggcgccccct gactccgtcc cggccagggg 120
gggccatgat ttccctcccc gggccccctgg tgaccaactt gctgcgggtt ttgttcctgg 180
ggctgagtgc cctcgcgccc cctcgcggg cccagctgca actgcacttg ccgccaacc 240
ggttgcaggc ggtggagggg ggggaagtgg tgcttcagc gtggtacacc ttgcacgggg 300
aggtgtcttc atcccagcca tgggaggtgc cctttgtgat gtggttcttc aaacagaaa 360
aaaaggagga tcaggtgttg tctacatca atggggtcac aacaagcaaa cctggagtat 420
ccttgggtcta ctccatgcc tcccggaacc tgtccctgcg gctggagggt ctccaggaga 480
aagactctgg cccctacagc tgcctcgtga atgtgcaaga caaacaaggc aaatctaggg 540
gccacagcat caaaacctta gaactcaatg tactgggtcc tccagctcct ccctcctgcc 600
gtctccaggg tgtgccccat gtgggggcaa acgtgaccct gagctgccag tctccaagga 660
gtaagcccg tgtccaatac cagtgggatc ggcagcttcc atccttcag actttctttg 720
caccagcatt agatgtcatc cgtgggtctt taagcctcac caacctttcg tcttccatgg 780
ctggagtcta tgtctgcaag gcccaaatg aggtgggcac tgcccaatgt aatgtgacgc 840
tggaagttag cacagggcct ggagctgcag tgggtgctgg agctgttgtg ggtaccttg 900
ttggactggg gttgctggct gggtgggtcc tcttgtagca ccgcccgggc aaggccctgg 960
aggagccagc caatgatata aaggaggatg ccattgctcc ccggaccctg cctggccca 1020
agagctcaga cacaatctcc aagaatggga ccctttcctc tgtcacctcc gcacgagccc 1080
tccggccacc ccatggccct ccaggcctg gtgcattgac cccacgccc agtctctcca 1140
gccaggccct gccctcacca agactgcccc cgacagatgg ggcccaccct caaccaatat 1200
cccccatccc tgggtggggtt tcttcctctg gcttgagccg catgggtgct gtgcctgtga 1260
tgggtgcctgc ccagagtcaa gctggctctc tgggtatgat accccaccac tcattggcta 1320
aaggatttgg ggtctctcct tctataagg gtcacctcta gcacagaggc ctgagtcag 1380
ggaaagagtc aactcctga ccttagtac tctgccccca cctctcttta ctgtgggaaa 1440
accatctcag taagacctaa gtgtccagga gacagaagga gaagaggaag tggatctgga 1500
attgggagga gcctccacc acccctgact cctccttatg aagccagctg ctgaaattag 1560
ctactacca agagtgaggg gcagagactt ccagtcactg agtctcccag gccccttga 1620
tctgtacccc acccctatct aacacacccc ttggctccca ctccagctcc ctgtattgat 1680
ataacctgtc aggttggttt gggttaggtt tactggggca gaggataggg aatctcttat 1740
taaaactaac atgaaatatg tggtgttttc atttgcaaat ttaaataaag atacataatg 1800
tttgtatgaa aaa 1813

```

<210> 39

<211> 390

<212> PRT

<213> Homo sapiens

<400> 39

Met Ile Ser Leu Pro Gly Pro Leu Val Thr Asn Leu Leu Arg Phe Leu

1	5	10	15
Phe Leu Gly Leu Ser Ala Leu Ala Pro Pro Ser Arg Ala Gln Leu Gln	20	25	30
Leu His Leu Pro Ala Asn Arg Leu Gln Ala Val Glu Gly Gly Glu Val	35	40	45
Val Leu Pro Ala Trp Tyr Thr Leu His Gly Glu Val Ser Ser Ser Gln	50	55	60
Pro Trp Glu Val Pro Phe Val Met Trp Phe Phe Lys Gln Lys Glu Lys	65	70	75
Glu Asp Gln Val Leu Ser Tyr Ile Asn Gly Val Thr Thr Ser Lys Pro	85	90	95
Gly Val Ser Leu Val Tyr Ser Met Pro Ser Arg Asn Leu Ser Leu Arg	100	105	110
Leu Glu Gly Leu Gln Glu Lys Asp Ser Gly Pro Tyr Ser Cys Ser Val	115	120	125
Asn Val Gln Asp Lys Gln Gly Lys Ser Arg Gly His Ser Ile Lys Thr	130	135	140
Leu Glu Leu Asn Val Leu Val Pro Pro Ala Pro Pro Ser Cys Arg Leu	145	150	155
Gln Gly Val Pro His Val Gly Ala Asn Val Thr Leu Ser Cys Gln Ser	165	170	175
Pro Arg Ser Lys Pro Ala Val Gln Tyr Gln Trp Asp Arg Gln Leu Pro	180	185	190
Ser Phe Gln Thr Phe Phe Ala Pro Ala Leu Asp Val Ile Arg Gly Ser	195	200	205
Leu Ser Leu Thr Asn Leu Ser Ser Ser Met Ala Gly Val Tyr Val Cys	210	215	220
Lys Ala His Asn Glu Val Gly Thr Ala Gln Cys Asn Val Thr Leu Glu	225	230	235
Val Ser Thr Gly Pro Gly Ala Ala Val Val Ala Gly Ala Val Val Gly	245	250	255
Thr Leu Val Gly Leu Gly Leu Leu Ala Gly Leu Val Leu Leu Tyr His	260	265	270
Arg Arg Gly Lys Ala Leu Glu Glu Pro Ala Asn Asp Ile Lys Glu Asp	275	280	285

Ala Ile Ala Pro Arg Thr Leu Pro Trp Pro Lys Ser Ser Asp Thr Ile
 290 295 300

Ser Lys Asn Gly Thr Leu Ser Ser Val Thr Ser Ala Arg Ala Leu Arg
 305 310 315 320

Pro Pro His Gly Pro Pro Arg Pro Gly Ala Leu Thr Pro Thr Pro Ser
 325 330 335

Leu Ser Ser Gln Ala Leu Pro Ser Pro Arg Leu Pro Thr Thr Asp Gly
 340 345 350

Ala His Pro Gln Pro Ile Ser Pro Ile Pro Gly Gly Val Ser Ser Ser
 355 360 365

Gly Leu Ser Arg Met Gly Ala Val Pro Val Met Val Pro Ala Gln Ser
 370 375 380

Gln Ala Gly Ser Leu Val
 385 390

<210> 40

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 40

agggtctcca ggagaaagac tc

22

<210> 41

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 41

attgtgggcc ttgcagacat agac

24

<210> 42

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.

<400> 42
 ggccacagca tcaaacctt agaactcaat gtactggttc ctccagctcc 50

<210> 43
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 43
 gtgtgacaca gcgtgggc 18

<210> 44
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 44
 gaccggcagg cttctgcg 18

<210> 45
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 45
 cagcagcttc agccaccagg agtgg 25

<210> 46
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 46
 ctgagccgtg ggctgcagtc tcgc 24

<210> 47

<211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 47
 ccgactacga ctggttcttc atcatgcagg atgacacata tgtgc 45

<210> 48
 <211> 2822
 <212> DNA
 <213> Homo sapiens

<400> 48
 cgccaccact gcggccaccg ccaatgaaac gcctcccgt cctagtgggt tttccactt 60
 tgttgaattg ttctataact caaaattgca ccaagacacc ttgtctccca aatgcaaaat 120
 gtgaaatacg caatggaatt gaagcctgct attgcaacat gggattttca ggaaatgggtg 180
 tcacaatttg tgaagatgat aatgaatgtg gaaatttaac tcagtcctgt ggcgaaaatg 240
 ctaattgcac taacacagaa ggaagttatt attgtatgtg tgtacctggc ttcagatcca 300
 gcagtaacca agacagggtt atcactaatg atggaaccgt ctgtatagaa aatgtgaatg 360
 caaactgcc tttagataat gtctgtatag ctgcaaatat taataaaact ttaacaaaaa 420
 tcagatccat aaaagaacct gtggctttgc tacaagaagt ctatagaaat tctgtgacag 480
 atctttcacc aacagatata attacatata tagaaatatt agctgaatca tcttcattac 540
 taggttacaa gaacaacact atctcagcca aggacaccct ttctaactca actcttactg 600
 aatttgtaaa aaccgtgaat aattttgttc aaagggatac atttgtagtt tgggacaagt 660
 tatctgtgaa tcataggaga acacatctta caaaactcat gcacactgtt gaacaagcta 720
 cttaaggat atcccagagc ttccaaaaga ccacagagtt tgatacaaat tcaacggata 780
 tagctctcaa agttttcttt tttgattcat ataacatgaa acatattcat cctcatatga 840
 atatggatgg agactacata aatatatttc caaagagaaa agctgcatat gattcaaatg 900
 gcaatgttgc agttgcattt ttatattata agagtattgg tcctttgctt tcatcatctg 960
 acaacttctt attgaaacct caaaattatg ataattctga agaggaggaa agagtcatat 1020
 cttcagtaat ttcagtcctc atgagctcaa acccaccac attatatgaa cttgaaaaaa 1080
 taacatttac attaagtcac cgaaaggcca cagataggta taggagtcta tgtgcatttt 1140
 ggaattactc acctgatacc atgaatggca gctggctctc agagggctgt gagctgacat 1200
 actcaaatga gaccacaccc tcatgccgt gtaatcacct gacacatttt gcaattttga 1260
 tgtcctctgg tccttcattt ggtattaaag attataatat tcttacaagg atcactcaac 1320
 taggaataat tatttcactg atttgccttg ccatatgcat ttttaccttc tgggtcttca 1380
 gtgaaattca aagcaccagg acaacaattc acaaaaatct ttgctgtagc ctatttcttg 1440
 ctgaacttgt ttttcttggt gggatcaata caaatactaa taagctcttc tgttcaatca 1500
 ttgccggact gctacactac ttcttttttag ctgcttttgc atggatgtgc attgaaggca 1560
 tacatctcta tctcattggt gtgggtgtca tctacaacaa gggatttttg cacaagaatt 1620
 tttatatctt tggctatcta agcccagccg tggtagttgg attttcggca gcactaggat 1680
 acagatatta tggcacaacc aaagtatggt ggcttagcac cgaaaacaac tttatttgga 1740
 gttttatagg accagcatgc ctaatcattc ttgttaatct cttggccttt ggagtcacat 1800
 tatacaaagt ttttcgtcac actgcagggt tgaaaccaga agttagttgc tttgagaaca 1860
 taaggtcttg tgcaagagga gccctcgtc tctgttccct tctcggcacc acctggtact 1920
 ttgggggttct ccattgtgtg cagcatcag tgggtacaga ttacctcttc acagtcagca 1980
 atgctttcca ggggatgttc atttttttat tctgtgtgt tttatctaga aagattcaag 2040
 aagaatatta cagattgttc aaaaatgtcc cctgttgttt tggatgttta aggtaaacat 2100
 agagaatggt ggataattac aactgcacaa aaataaaaaat tccaagctgt ggatgaccaa 2160

```

tgtataaaaa tgactcatca aattatccaa ttattaacta ctagacaaaa agtatttttaa 2220
atcagttttt ctgttttatgc tataggaact gtagataata aggtaaaatt atgtatcata 2280
tagatatact atgtttttct atgtgaaata gttctgtcaa aaatagtatt gcagatattt 2340
ggaaagtaat tggttttctca ggagtgatat cactgcaccc aaggaaagat tttctttcta 2400
acacgagaag tatatgaatg tcctgaagga aaccactggc ttgatatttc tgtgactcgt 2460
gttgcccttg aaactagtcc cctaccacct cggtaatgag ctccattaca gaaagtggaa 2520
cataagagaa tgaaggggca gaatatcaaa cagtgaaaag ggaatgataa gatgtatttt 2580
gaatgaactg ttttttctgt agactagctg agaaattggt gacataaaat aaagaattga 2640
agaaacacat ttaccattt tgtgaattgt tctgaactta aatgtccact aaaacaactt 2700
agacttctgt ttgctaaatc tgtttctttt tctaatatc taaaaaaaa aaaaagggtt 2760
acctccacaa attgaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2820
aa

```

```

<210> 49
<211> 690
<212> PRT
<213> Homo sapiens

```

```

<400> 49
Met Lys Arg Leu Pro Leu Leu Val Val Phe Ser Thr Leu Leu Asn Cys
 1             5             10             15

Ser Tyr Thr Gln Asn Cys Thr Lys Thr Pro Cys Leu Pro Asn Ala Lys
      20             25             30

Cys Glu Ile Arg Asn Gly Ile Glu Ala Cys Tyr Cys Asn Met Gly Phe
      35             40             45

Ser Gly Asn Gly Val Thr Ile Cys Glu Asp Asp Asn Glu Cys Gly Asn
      50             55             60

Leu Thr Gln Ser Cys Gly Glu Asn Ala Asn Cys Thr Asn Thr Glu Gly
      65             70             75             80

Ser Tyr Tyr Cys Met Cys Val Pro Gly Phe Arg Ser Ser Ser Asn Gln
      85             90             95

Asp Arg Phe Ile Thr Asn Asp Gly Thr Val Cys Ile Glu Asn Val Asn
      100            105            110

Ala Asn Cys His Leu Asp Asn Val Cys Ile Ala Ala Asn Ile Asn Lys
      115            120            125

Thr Leu Thr Lys Ile Arg Ser Ile Lys Glu Pro Val Ala Leu Leu Gln
      130            135            140

Glu Val Tyr Arg Asn Ser Val Thr Asp Leu Ser Pro Thr Asp Ile Ile
      145            150            155            160

Thr Tyr Ile Glu Ile Leu Ala Glu Ser Ser Ser Leu Leu Gly Tyr Lys
      165            170            175

Asn Asn Thr Ile Ser Ala Lys Asp Thr Leu Ser Asn Ser Thr Leu Thr

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 180 | | | | 185 | | | | 190 | | | | |
| Glu | Phe | Val | Lys | Thr | Val | Asn | Asn | Phe | Val | Gln | Arg | Asp | Thr | Phe | Val |
| | | 195 | | | | 200 | | | | | | 205 | | | |
| Val | Trp | Asp | Lys | Leu | Ser | Val | Asn | His | Arg | Arg | Thr | His | Leu | Thr | Lys |
| | | 210 | | | | 215 | | | | | | 220 | | | |
| Leu | Met | His | Thr | Val | Glu | Gln | Ala | Thr | Leu | Arg | Ile | Ser | Gln | Ser | Phe |
| | | 225 | | | 230 | | | | | 235 | | | | 240 | |
| Gln | Lys | Thr | Thr | Glu | Phe | Asp | Thr | Asn | Ser | Thr | Asp | Ile | Ala | Leu | Lys |
| | | | | 245 | | | | | 250 | | | | 255 | | |
| Val | Phe | Phe | Phe | Asp | Ser | Tyr | Asn | Met | Lys | His | Ile | His | Pro | His | Met |
| | | | 260 | | | | 265 | | | | | | 270 | | |
| Asn | Met | Asp | Gly | Asp | Tyr | Ile | Asn | Ile | Phe | Pro | Lys | Arg | Lys | Ala | Ala |
| | | 275 | | | | 280 | | | | | | 285 | | | |
| Tyr | Asp | Ser | Asn | Gly | Asn | Val | Ala | Val | Ala | Phe | Leu | Tyr | Tyr | Lys | Ser |
| | | 290 | | | | 295 | | | | 300 | | | | | |
| Ile | Gly | Pro | Leu | Leu | Ser | Ser | Ser | Asp | Asn | Phe | Leu | Leu | Lys | Pro | Gln |
| | | 305 | | | 310 | | | | | 315 | | | | 320 | |
| Asn | Tyr | Asp | Asn | Ser | Glu | Glu | Glu | Glu | Arg | Val | Ile | Ser | Ser | Val | Ile |
| | | | | 325 | | | | | 330 | | | | 335 | | |
| Ser | Val | Ser | Met | Ser | Ser | Asn | Pro | Pro | Thr | Leu | Tyr | Glu | Leu | Glu | Lys |
| | | | 340 | | | | | 345 | | | | 350 | | | |
| Ile | Thr | Phe | Thr | Leu | Ser | His | Arg | Lys | Val | Thr | Asp | Arg | Tyr | Arg | Ser |
| | | | 355 | | | 360 | | | | | | 365 | | | |
| Leu | Cys | Ala | Phe | Trp | Asn | Tyr | Ser | Pro | Asp | Thr | Met | Asn | Gly | Ser | Trp |
| | | 370 | | | | 375 | | | | 380 | | | | | |
| Ser | Ser | Glu | Gly | Cys | Glu | Leu | Thr | Tyr | Ser | Asn | Glu | Thr | His | Thr | Ser |
| | | 385 | | | 390 | | | | | 395 | | | | 400 | |
| Cys | Arg | Cys | Asn | His | Leu | Thr | His | Phe | Ala | Ile | Leu | Met | Ser | Ser | Gly |
| | | | | 405 | | | | | 410 | | | | 415 | | |
| Pro | Ser | Ile | Gly | Ile | Lys | Asp | Tyr | Asn | Ile | Leu | Thr | Arg | Ile | Thr | Gln |
| | | | 420 | | | | | 425 | | | | 430 | | | |
| Leu | Gly | Ile | Ile | Ile | Ser | Leu | Ile | Cys | Leu | Ala | Ile | Cys | Ile | Phe | Thr |
| | | 435 | | | | 440 | | | | | | 445 | | | |
| Phe | Trp | Phe | Phe | Ser | Glu | Ile | Gln | Ser | Thr | Arg | Thr | Thr | Ile | His | Lys |
| | | 450 | | | | 455 | | | | 460 | | | | | |

```

Asn Leu Cys Cys Ser Leu Phe Leu Ala Glu Leu Val Phe Leu Val Gly
465                               470                               475                               480

Ile Asn Thr Asn Thr Asn Lys Leu Phe Cys Ser Ile Ile Ala Gly Leu
                               485                               490                               495

Leu His Tyr Phe Phe Leu Ala Ala Phe Ala Trp Met Cys Ile Glu Gly
                               500                               505                               510

Ile His Leu Tyr Leu Ile Val Val Gly Val Ile Tyr Asn Lys Gly Phe
                               515                               520                               525

Leu His Lys Asn Phe Tyr Ile Phe Gly Tyr Leu Ser Pro Ala Val Val
                               530                               535                               540

Val Gly Phe Ser Ala Ala Leu Gly Tyr Arg Tyr Tyr Gly Thr Thr Lys
545                               550                               555                               560

Val Cys Trp Leu Ser Thr Glu Asn Asn Phe Ile Trp Ser Phe Ile Gly
                               565                               570                               575

Pro Ala Cys Leu Ile Ile Leu Val Asn Leu Leu Ala Phe Gly Val Ile
                               580                               585                               590

Ile Tyr Lys Val Phe Arg His Thr Ala Gly Leu Lys Pro Glu Val Ser
                               595                               600                               605

Cys Phe Glu Asn Ile Arg Ser Cys Ala Arg Gly Ala Leu Ala Leu Leu
610                               615                               620

Phe Leu Leu Gly Thr Thr Trp Ile Phe Gly Val Leu His Val Val His
625                               630                               635                               640

Ala Ser Val Val Thr Ala Tyr Leu Phe Thr Val Ser Asn Ala Phe Gln
                               645                               650                               655

Gly Met Phe Ile Phe Leu Phe Leu Cys Val Leu Ser Arg Lys Ile Gln
                               660                               665                               670

Glu Glu Tyr Tyr Arg Leu Phe Lys Asn Val Pro Cys Cys Phe Gly Cys
675                               680                               685

Leu Arg
690

```

<210> 50

<211> 589

<212> DNA

<213> Homo sapiens

<220>

<221> modified_base

<222> (61)

<223> a, t, c or g

<400> 50

```

tggaaacata tcctccctca tatgaatatg gatggagact acataaatat atttccaaag 60
ngaaaagccg gcatatggat tcaaatggca atgttgcagt tgcattttta tattataaga 120
gtattggtcc ctttgttttc atcatctgac aacttcttat tgaaacctca aaattatgat 180
aattctgaag aggaggaaag agtcatatct tcagtaattt cagtctcaat gagctcaaac 240
ccaccacat tatatgaact tgaaaaaata acatttacat taagtcacg aaaggtcaca 300
gataggata ggagtctatg tggcattttg gaatactcac ctgataccat gaatggcagc 360
tgggtcttcag agggctgtga gctgacatac tcaaatgaga cccacacctc atgccgctgt 420
aatcacctga cacattttgc aattttgatg tcctctgggc cttccattgg tattaagat 480
tataatattc ttacaaggat cactcaacta ggaataatta ttctactgat ttgtcttgcc 540
atatgcattt ttaccttctg gttcttcagt gaaattcaaa gcaccagga 589

```

<210> 51

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 51

ggtaatgagc tccattacag 20

<210> 52

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 52

ggagtagaaa gcgcatgg 18

<210> 53

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 53

cacctgatac catgaatggc ag 22

<210> 54

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 54

cgagctcgaa ttaattcg

18

<210> 55

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 55

ggatctcctg agctcagg

18

<210> 56

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 56

cctagttgag tgatccttgt aag

23

<210> 57

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 57

atgagaccca cacctcatgc cgctgtaatc acctgacaca ttttgcaatt

50

<210> 58

<211> 2137

<212> DNA

<213> Homo sapiens

<400> 58

gctcccagcc aagaacctcg gggccgctgc gcggtgggga ggagttcccc gaaacccggc 60
cgctaagcga ggccctcctcc tcccgcagat ccgaacgggc tgggcggggg caccgccggc 120

```

gggacaagaa gccgccgcct gcctgcccgg gcccggggag ggggctgggg ctggggccgg 180
aggcgggggtg tgagtgggtg tgtgcggggg gcggaggctt gatgcaatcc cgataagaaa 240
tgctcgggtg tcttgggcac ctaccctggg ggcccgtaa ggcgtactat ataaggctgc 300
cgggccggag ccgccgcgcc gtcagagcag gagcgtgcg tccaggatct agggccacga 360
ccatcccaac ccggcactca cagccccgca gcgcacccg gtccgcgcc agcctcccg 420
acccccatcg ccggagctgc gccgagagcc ccaggagggt gccatgcgga gcgggtgtgt 480
gggtggtccac gtatggatcc tggccggcct ctggctggcc gtggccgggc gccccctgc 540
cttctcggac gcggggcccc acgtgcaacta cggctggggc gaccccatcc gcctgcggca 600
cctgtacacc tccggccccc acgggctctc cagctgcttc ctgcgcaccc gtgccgacgg 660
cgctcgtggac tgcgcgcggg gccagagcgc gcacagtttg ctggagatca aggcagtcgc 720
tctgcggacc gtggccatca agggcgtgca cagcgtgcgg tacctctgca tgggcgccga 780
cggcaagatg caggggctgc ttcagtactc ggaggaagac tgtgctttcg aggaggagat 840
ccgccagat ggctacaatg tgtaccgatc cgagaagcac cgcctcccgg tctccctgag 900
cagtgcacaa cagcggcagc tgtacaagaa cagaggcttt cttccactct ctcatcttct 960
gcccattgtg cccatggtcc cagaggagcc tgaggacctc aggggccact tggaaatctga 1020
catgtttctt tcgcccctgg agaccgacag catggacca tttgggcttg tcaccggact 1080
ggaggccgtg aggagtccca gctttgagaa gtaactgaga ccatgcccgg gcctcttcac 1140
tgctgccagg ggctgtggtg cctgcagcgt gggggacgtg cttctacaag aacagtcctg 1200
agtccacgtt ctgtttagct ttaggaagaa acatctagaa gttgtacata ttcagagttt 1260
tccattggca gtgccagttt ctagccaata gacttgtctg atcataacat tgtaagcctg 1320
tagcttgccc agctgctgcc tgggccccca ttctgctccc tcgaggttgc tggacaagct 1380
gctgcactgt ctcagttctg cttgaatacc tccatcgatg gggaactcac ttcctttgga 1440
aaaattctta tgtcaagctg aaattctcta attttttctc atcacttccc caggagcagc 1500
cagaagacag gcagtagttt taatttcagg aacaggatgat ccactctgta aaacagcagg 1560
taaatttcac tcaaccccat gtgggaattg atctatatct ctacttcag ggaccatttg 1620
cccttcccaa atccctccag gccagaactg actggagcag gcatggccca ccaggcttca 1680
ggagtagggg aagcctggag cccactcca gccctgggac aacttgagaa tccccctga 1740
ggccagttct gtcattggatg ctgtcctgag aataacttgc tgtcccgggtg tcacctgctt 1800
ccatctccca gccaccagc cctctgccca cctcacatgc ctccccatgg attggggcct 1860
cccaggcccc ccacettatg tcaacctgca cttcttgttc aaaaatcagg aaaagaaaag 1920
atttgaagac cccaagtctt gtcaataact tgctgtgtgg aagcagcggg ggaagacct 1980
gaacccttcc cccagcactt ggttttccaa catgatatt atgagtaatt tattttgata 2040
tgtacatctc ttattttctt acattattta tgccccaaa ttatatttat gtatgtaagt 2100
gaggtttgtt ttgtatatta aaatggagtt tgtttgt 2137

```

<210> 59

<211> 216

<212> PRT

<213> Homo sapiens

<400> 59

```

Met Arg Ser Gly Cys Val Val Val His Val Trp Ile Leu Ala Gly Leu
  1                      5                      10                      15

```

```

Trp Leu Ala Val Ala Gly Arg Pro Leu Ala Phe Ser Asp Ala Gly Pro
                20                25                30

```

```

His Val His Tyr Gly Trp Gly Asp Pro Ile Arg Leu Arg His Leu Tyr
    35                40                45

```

```

Thr Ser Gly Pro His Gly Leu Ser Ser Cys Phe Leu Arg Ile Arg Ala
    50                55                60

```

Asp Gly Val Val Asp Cys Ala Arg Gly Gln Ser Ala His Ser Leu Leu
65 70 75 80

Glu Ile Lys Ala Val Ala Leu Arg Thr Val Ala Ile Lys Gly Val His
85 90 95

Ser Val Arg Tyr Leu Cys Met Gly Ala Asp Gly Lys Met Gln Gly Leu
100 105 110

Leu Gln Tyr Ser Glu Glu Asp Cys Ala Phe Glu Glu Glu Ile Arg Pro
115 120 125

Asp Gly Tyr Asn Val Tyr Arg Ser Glu Lys His Arg Leu Pro Val Ser
130 135 140

Leu Ser Ser Ala Lys Gln Arg Gln Leu Tyr Lys Asn Arg Gly Phe Leu
145 150 155 160

Pro Leu Ser His Phe Leu Pro Met Leu Pro Met Val Pro Glu Glu Pro
165 170 175

Glu Asp Leu Arg Gly His Leu Glu Ser Asp Met Phe Ser Ser Pro Leu
180 185 190

Glu Thr Asp Ser Met Asp Pro Phe Gly Leu Val Thr Gly Leu Glu Ala
195 200 205

Val Arg Ser Pro Ser Phe Glu Lys
210 215

<210> 60

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 60

atccgcccag atggctacaa tgtgta

26

<210> 61

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 61

gcctcccgtg ctccctgagc agtgccaaac agcggcagtg ta

42

<210> 62
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 62
 ccagtccggt gacaagccca aa 22

<210> 63
 <211> 1295
 <212> DNA
 <213> Homo sapiens

<400> 63
 cccagaagtt caagggcccc cggcctcctg cgctcctgcc gccgggaccc tcgacctcct 60
 cagagcagcc ggctgccgcc ccgggaagat ggcgaggagg agccgccacc gcctcctcct 120
 gctgctgctg cgctacctgg tggcgccctt gggctatcat aaggcctatg gggtttctgc 180
 cccaaaagac caacaagtag tcacagcagt agagtaccaa gaggctatgt tagcctgcaa 240
 aaccccaag aagactgttt cctccagatt agagtggagg aaactgggtc ggagtgtctc 300
 ctttgtctac tatcaacaga ctcttcaagg tgatttttaa aatcgagctg agatgataga 360
 tttcaatatc cggatcaaaa atgtgacaag aagtgatgag gggaaatata gttgtgaagt 420
 tagtgcccca tctgagcaag gccaaaacct ggaagaggat acagtcactc tggaaagtatt 480
 agtggctcca gcagttccat catgtgaagt accctcttct gctctgagtg gaactgtggt 540
 agagctacga tgtcaagaca aagaaggga tccagctcct gaatacacat ggtttaagga 600
 tggcatccgt ttgctagaaa atcccagact tggctcccaa agcaccaaca gctcatacac 660
 aatgaataca aaaactggaa ctctgcaatt taatactgtt tccaaactgg aactggaga 720
 atattcctgt gaagcccgca attctgttgg atatcgagg tgcctggga aacgaatgca 780
 agtagatgat ctcaacataa gtggcatcat agcagccgta gtagttgtgg ctttagtgat 840
 ttccgtttgt ggccttgggt tatgctatgc tcagaggaaa ggctactttt caaaagaaac 900
 ctccctccag aagagtaatt ctcatctaa agccacgaca atgagtgaat atgtgcagt 960
 gctcacgcct gtaatcccag cactttggaa ggcgcggcgg ggcggatcac gaggtcagga 1020
 gttctagacc agtctggcca atatggtgaa accccatctc tactaaaata caaaaattag 1080
 ctgggcatgg tggcatgtgc ctgcagttcc agctgcttgg gagacaggag aatcacttga 1140
 acccgggagg cggagggttc agtgagctga gatcacgcca ctgcagtcca gcctgggtaa 1200
 cagagcaaga ttccatctca aaaaataaaa taaataaata aataaatact gggtttttacc 1260
 tgtagaattc ttacaataaa tatagcttga tattc 1295

<210> 64
 <211> 312
 <212> PRT
 <213> Homo sapiens

<400> 64
 Met Ala Arg Arg Ser Arg His Arg Leu Leu Leu Leu Leu Arg Tyr
 1 5 10 15
 Leu Val Val Ala Leu Gly Tyr His Lys Ala Tyr Gly Phe Ser Ala Pro
 20 25 30

Lys Asp Gln Gln Val Val Thr Ala Val Glu Tyr Gln Glu Ala Ile Leu
 35 40 45
 Ala Cys Lys Thr Pro Lys Lys Thr Val Ser Ser Arg Leu Glu Trp Lys
 50 55 60
 Lys Leu Gly Arg Ser Val Ser Phe Val Tyr Tyr Gln Gln Thr Leu Gln
 65 70 75 80
 Gly Asp Phe Lys Asn Arg Ala Glu Met Ile Asp Phe Asn Ile Arg Ile
 85 90 95
 Lys Asn Val Thr Arg Ser Asp Ala Gly Lys Tyr Arg Cys Glu Val Ser
 100 105 110
 Ala Pro Ser Glu Gln Gly Gln Asn Leu Glu Glu Asp Thr Val Thr Leu
 115 120 125
 Glu Val Leu Val Ala Pro Ala Val Pro Ser Cys Glu Val Pro Ser Ser
 130 135 140
 Ala Leu Ser Gly Thr Val Val Glu Leu Arg Cys Gln Asp Lys Glu Gly
 145 150 155 160
 Asn Pro Ala Pro Glu Tyr Thr Trp Phe Lys Asp Gly Ile Arg Leu Leu
 165 170 175
 Glu Asn Pro Arg Leu Gly Ser Gln Ser Thr Asn Ser Ser Tyr Thr Met
 180 185 190
 Asn Thr Lys Thr Gly Thr Leu Gln Phe Asn Thr Val Ser Lys Leu Asp
 195 200 205
 Thr Gly Glu Tyr Ser Cys Glu Ala Arg Asn Ser Val Gly Tyr Arg Arg
 210 215 220
 Cys Pro Gly Lys Arg Met Gln Val Asp Asp Leu Asn Ile Ser Gly Ile
 225 230 235 240
 Ile Ala Ala Val Val Val Val Ala Leu Val Ile Ser Val Cys Gly Leu
 245 250 255
 Gly Val Cys Tyr Ala Gln Arg Lys Gly Tyr Phe Ser Lys Glu Thr Ser
 260 265 270
 Phe Gln Lys Ser Asn Ser Ser Ser Lys Ala Thr Thr Met Ser Glu Asn
 275 280 285
 Val Gln Trp Leu Thr Pro Val Ile Pro Ala Leu Trp Lys Ala Ala Ala
 290 295 300
 Gly Gly Ser Arg Gly Gln Glu Phe

305 310

<210> 65
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 65
 atcgttgtga agttagtgcc cc 22

<210> 66
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 66
 acctgcgata tccaacagaa ttg 23

<210> 67
 <211> 48
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 67
 ggaagaggat acagtcactc tggaagtatt agtggctcca gcagttcc 48

<210> 68
 <211> 2639
 <212> DNA
 <213> Homo sapiens

<400> 68
 gacatcggag gtgggctagc actgaaactg cttttcaaga cgaggaagag gaggagaaag 60
 agaaagaaga ggaagatgtt gggcaacatt tatttaacat gctccacagc cgggaccctg 120
 gcatcatgct gctattcctg caaatactga agaagcatgg gatttaaata ttttacttct 180
 aaataaatga attactcaat ctccatgac catctataca tactccacct tcaaaaagta 240
 catcaatatt atatcattaa ggaaatagta accttctctt ctccaatag catgacattt 300
 ttggacaatg caattgtggc actggcactt atttcagtga agaaaaactt tgttggttcta 360
 tggcattcat catttgacaa atgcaagcat cttccttata aatcagctcc tattgaactt 420
 actagcactg actgtggaat ccttaagggc ccattacatt tctgaagaag aaagctaaga 480
 tgaaggacat gccactccga attcatgtgc tacttggcct agctatcact acactagtac 540

```

aagctgtaga taaaaaagtg gattgtccac gggtatgtac gtgtgaaatc aggccttggt 600
ttacacccag atccatttat atggaagcat ctacagtgga ttgtaatgat ttaggtcttt 660
taactttccc agccagattg ccagctaaca cacagattct tctcctacag actaacaata 720
ttgcaaaaat tgaatactcc acagactttc cagtaaacct tactggcctg gatttatctc 780
aaaacaattt atcttcagtc accaatatta atgtaaaaaa gatgcctcag ctcccttctg 840
tgtacctaga ggaaaaacaaa cttactgaac tgccctgaaaa atgtctgtcc gaactgagca 900
acttacaaga actctatatt aatcacaaact tgctttctac aatttcacct ggagccttta 960
ttggcctaca taatcttctt cgacttcac tcaattcaaa tagattgcag atgatcaaca 1020
gtaagtgggt tgatgctctt ccaaactctag agattctgat gattggggaa aatccaatta 1080
tcagaatcaa agacatgaac ttttaagcctc ttatcaatct tcgcagcctg gttatagctg 1140
gtataaacct cacagaaata ccagataacg ccttggttg actggaaaac ttagaaaagca 1200
tctcttttta cgataacagg cttattaaag taccctcatgt tgctcttcaa aaagttgtaa 1260
atctcaaatt tttggatcta aataaaaaatc ctattaatag aatacgaagg ggtgatttta 1320
gcaatatgct acacttaaaa gagttgggga taaataatat gcctgagctg atttccatcg 1380
atagtcttgc tgtggataac ctgccagatt taagaaaaat agaagctact aacaacccta 1440
gattgtctta cattcacccc aatgcatttt tcagactccc caagctggaa tcactcatgc 1500
tgaacagcaa tgctctcagt gccctgtacc atgggtaccat tgagtctctg ccaaacccta 1560
aggaaatcag catacacagt aaccccatca ggtgtgactg tgtcatccgt tggatgaaca 1620
tgaacaaaac caacattoga ttcatggagc cagattcact gttttgcgtg gaccacactg 1680
aattccaagg tcagaatggt cggcaagtgc atttcaggga catgatggaa atttgtctcc 1740
ctcttatagc tctgagagc tttccttcta atctaaatgt agaagctggg agctatgttt 1800
cctttcactg tagagctact gcagaaccac agcctgaaat ctactggata acaccttctg 1860
gtcaaaaact cttgcctaata accctgacag acaagttcta tgtccattct gagggaaacac 1920
tagatataaa tggcgtaact cccaaagaag ggggtttata tacttgtata gcaactaacc 1980
tagttggcgc tgacttgaag tctgttatga tcaaagtggg tggatctttt ccacaagata 2040
acaatggctc tttgaatatt aaaataagag atattcaggc caattcagtt ttggtgtcct 2100
ggaaagcaag ttctaaaatt ctcaaactta gtgttaaata gacagccttt gtcaagactg 2160
aaaattctca tgctgcgcaa agtgctcgaa taccatctga tgtcaaggta tataatctta 2220
ctcatctgaa tccatcaact gagtataaaa tttgtattga tattcccacc atctatcaga 2280
aaaacagaaa aaaatgtgta aatgtcacca ccaaagggtt gcacctgat caaaaagagt 2340
atgaaaagaa taataccaca acacttatgg cctgtcttgg aggccttctg gggattattg 2400
gtgtgatatg tcttatcagc tgccctctctc cagaaatgaa ctgtgatggt ggacacagct 2460
atgtgaggaa ttacttacag aaaccaacct ttgcattagg tgagctttat cctcctctga 2520
taaactctctg ggaagcagga aaagaaaaaa gtacatcact gaaagtaaaa gcaactgtta 2580
taggtttacc aacaaatatg tcttaaaaac caccaaggaa acctactcca aaaatgaac 2639

```

<210> 69

<211> 708

<212> PRT

<213> Homo sapiens

<400> 69

```

Met Lys Asp Met Pro Leu Arg Ile His Val Leu Leu Gly Leu Ala Ile
  1                      5                      10                      15

```

```

Thr Thr Leu Val Gln Ala Val Asp Lys Lys Val Asp Cys Pro Arg Leu
                20                      25                      30

```

```

Cys Thr Cys Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser Ile Tyr Met
    35                      40                      45

```

```

Glu Ala Ser Thr Val Asp Cys Asn Asp Leu Gly Leu Leu Thr Phe Pro
    50                      55                      60

```

Ala Arg Leu Pro Ala Asn Thr Gln Ile Leu Leu Leu Gln Thr Asn Asn
 65 70 75 80
 Ile Ala Lys Ile Glu Tyr Ser Thr Asp Phe Pro Val Asn Leu Thr Gly
 85 90 95
 Leu Asp Leu Ser Gln Asn Asn Leu Ser Ser Val Thr Asn Ile Asn Val
 100 105 110
 Lys Lys Met Pro Gln Leu Leu Ser Val Tyr Leu Glu Glu Asn Lys Leu
 115 120 125
 Thr Glu Leu Pro Glu Lys Cys Leu Ser Glu Leu Ser Asn Leu Gln Glu
 130 135 140
 Leu Tyr Ile Asn His Asn Leu Leu Ser Thr Ile Ser Pro Gly Ala Phe
 145 150 155 160
 Ile Gly Leu His Asn Leu Leu Arg Leu His Leu Asn Ser Asn Arg Leu
 165 170 175
 Gln Met Ile Asn Ser Lys Trp Phe Asp Ala Leu Pro Asn Leu Glu Ile
 180 185 190
 Leu Met Ile Gly Glu Asn Pro Ile Ile Arg Ile Lys Asp Met Asn Phe
 195 200 205
 Lys Pro Leu Ile Asn Leu Arg Ser Leu Val Ile Ala Gly Ile Asn Leu
 210 215 220
 Thr Glu Ile Pro Asp Asn Ala Leu Val Gly Leu Glu Asn Leu Glu Ser
 225 230 235 240
 Ile Ser Phe Tyr Asp Asn Arg Leu Ile Lys Val Pro His Val Ala Leu
 245 250 255
 Gln Lys Val Val Asn Leu Lys Phe Leu Asp Leu Asn Lys Asn Pro Ile
 260 265 270
 Asn Arg Ile Arg Arg Gly Asp Phe Ser Asn Met Leu His Leu Lys Glu
 275 280 285
 Leu Gly Ile Asn Asn Met Pro Glu Leu Ile Ser Ile Asp Ser Leu Ala
 290 295 300
 Val Asp Asn Leu Pro Asp Leu Arg Lys Ile Glu Ala Thr Asn Asn Pro
 305 310 315 320
 Arg Leu Ser Tyr Ile His Pro Asn Ala Phe Phe Arg Leu Pro Lys Leu
 325 330 335
 Glu Ser Leu Met Leu Asn Ser Asn Ala Leu Ser Ala Leu Tyr His Gly

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 340 | | 345 | | 350 | | | | | | | | | | |
| Thr | Ile | Glu | Ser | Leu | Pro | Asn | Leu | Lys | Glu | Ile | Ser | Ile | His | Ser | Asn |
| | 355 | | | | | | 360 | | | | | 365 | | | |
| Pro | Ile | Arg | Cys | Asp | Cys | Val | Ile | Arg | Trp | Met | Asn | Met | Asn | Lys | Thr |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Asn | Ile | Arg | Phe | Met | Glu | Pro | Asp | Ser | Leu | Phe | Cys | Val | Asp | Pro | Pro |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Glu | Phe | Gln | Gly | Gln | Asn | Val | Arg | Gln | Val | His | Phe | Arg | Asp | Met | Met |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Glu | Ile | Cys | Leu | Pro | Leu | Ile | Ala | Pro | Glu | Ser | Phe | Pro | Ser | Asn | Leu |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Asn | Val | Glu | Ala | Gly | Ser | Tyr | Val | Ser | Phe | His | Cys | Arg | Ala | Thr | Ala |
| | 435 | | | | | | 440 | | | | | 445 | | | |
| Glu | Pro | Gln | Pro | Glu | Ile | Tyr | Trp | Ile | Thr | Pro | Ser | Gly | Gln | Lys | Leu |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Leu | Pro | Asn | Thr | Leu | Thr | Asp | Lys | Phe | Tyr | Val | His | Ser | Glu | Gly | Thr |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Leu | Asp | Ile | Asn | Gly | Val | Thr | Pro | Lys | Glu | Gly | Gly | Leu | Tyr | Thr | Cys |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Ile | Ala | Thr | Asn | Leu | Val | Gly | Ala | Asp | Leu | Lys | Ser | Val | Met | Ile | Lys |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Val | Asp | Gly | Ser | Phe | Pro | Gln | Asp | Asn | Asn | Gly | Ser | Leu | Asn | Ile | Lys |
| | 515 | | | | | | 520 | | | | | 525 | | | |
| Ile | Arg | Asp | Ile | Gln | Ala | Asn | Ser | Val | Leu | Val | Ser | Trp | Lys | Ala | Ser |
| | 530 | | | | | 535 | | | | | 540 | | | | |
| Ser | Lys | Ile | Leu | Lys | Ser | Ser | Val | Lys | Trp | Thr | Ala | Phe | Val | Lys | Thr |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Glu | Asn | Ser | His | Ala | Ala | Gln | Ser | Ala | Arg | Ile | Pro | Ser | Asp | Val | Lys |
| | | | | 565 | | | | | 570 | | | | | 575 | |
| Val | Tyr | Asn | Leu | Thr | His | Leu | Asn | Pro | Ser | Thr | Glu | Tyr | Lys | Ile | Cys |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Ile | Asp | Ile | Pro | Thr | Ile | Tyr | Gln | Lys | Asn | Arg | Lys | Lys | Cys | Val | Asn |
| | 595 | | | | | | 600 | | | | | 605 | | | |
| Val | Thr | Thr | Lys | Gly | Leu | His | Pro | Asp | Gln | Lys | Glu | Tyr | Glu | Lys | Asn |
| | 610 | | | | | 615 | | | | | 620 | | | | |

Asn Thr Thr Thr Leu Met Ala Cys Leu Gly Gly Leu Leu Gly Ile Ile
625 630 635 640

Gly Val Ile Cys Leu Ile Ser Cys Leu Ser Pro Glu Met Asn Cys Asp
645 650 655

Gly Gly His Ser Tyr Val Arg Asn Tyr Leu Gln Lys Pro Thr Phe Ala
660 665 670

Leu Gly Glu Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Ala Gly Lys
675 680 685

Glu Lys Ser Thr Ser Leu Lys Val Lys Ala Thr Val Ile Gly Leu Pro
690 695 700

Thr Asn Met Ser
705

<210> 70

<211> 1305

<212> DNA

<213> Homo sapiens

<400> 70

```

gcccgaggact ggcgcaaggt gcccaagcaa ggaaagaaat aatgaagaga cacatgtgtt 60
agctgcagcc ttttgaaaca cgcaagaagg aaatcaatag tgtggacagg gctggaacct 120
ttaccacgct tgttgagta gatgaggaat gggctcgtga ttatgctgac attccagcat 180
gaatctggta gacctgtggt taaccctgtc cctctccatg tgtctcctcc tacaaagttt 240
tgtttcttat atactgtgct ttcattctgc cagtatgtgt cccaagggct gtctttgttc 300
ttcctctggg ggttttaaat tcacctgtag caatgcaaat ctcaaggaaa tacctagaga 360
tcttctctct gaaacagtct tactgtatct ggactccaat cagatcacat ctattcccaa 420
tgaaatTTTT aaggacctcc atcaactgag agttctcaac ctgtccaaaa atggcattga 480
gtttatcgat gagcatgcct tcaaaggagt agctgaaacc ttgcagactc tggacttgct 540
cgacaatcgg attcaaagtg tgcacaaaaa tgcttcaat aacctgaagg ccagggccag 600
aattgccaac aacctctggc actgcgactg tactctacag caagttctga ggagcatggc 660
gtccaatcat gagacagccc acaactgat ctgtaaaacg tccgtgttgg atgaacatgc 720
tggcagacca ttctcaatg ctgccaacga cgtgacctt tgtaacctcc ctaaaaaaac 780
taccgattat gccatgctgg tcaccatggt tggctgggtc actatgggtg tctcatatgt 840
ggtatattat gtgaggcaaa atcaggagga tgcccgaga cacctcgaat acttgaaatc 900
cctgccaagc aggcagaaga aagcagatga acctgatgat attagcactg tggatatagt 960
tccaaactga ctgtcattga gaaagaaaga aagtagtttg cgattgcagt agaaataagt 1020
ggtttacttc tcccatccat tgtaaacatt tgaaactttg tatttcagtt ttttttgaat 1080
tatgccactg ctgaactttt acaaaacact acaacataaa taatttgagt ttaggtgatc 1140
cacccttaa ttgtacccc gatggtatat ttctgagtaa gctactatct gaacattagt 1200
tagatccatc tcaactattha ataatgaaat ttattttttt aatttaaaag caaataaaag 1260
cttaactttg aacctggga aaaaaaaaaa aaaaaaaaaa aaaca 1305

```

<210> 71

<211> 259

<212> PRT

<213> Homo sapiens

<400> 71

Met Asn Leu Val Asp Leu Trp Leu Thr Arg Ser Leu Ser Met Cys Leu
 1 5 10 15
 Leu Leu Gln Ser Phe Val Leu Met Ile Leu Cys Phe His Ser Ala Ser
 20 25 30
 Met Cys Pro Lys Gly Cys Leu Cys Ser Ser Ser Gly Gly Leu Asn Val
 35 40 45
 Thr Cys Ser Asn Ala Asn Leu Lys Glu Ile Pro Arg Asp Leu Pro Pro
 50 55 60
 Glu Thr Val Leu Leu Tyr Leu Asp Ser Asn Gln Ile Thr Ser Ile Pro
 65 70 75 80
 Asn Glu Ile Phe Lys Asp Leu His Gln Leu Arg Val Leu Asn Leu Ser
 85 90 95
 Lys Asn Gly Ile Glu Phe Ile Asp Glu His Ala Phe Lys Gly Val Ala
 100 105 110
 Glu Thr Leu Gln Thr Leu Asp Leu Ser Asp Asn Arg Ile Gln Ser Val
 115 120 125
 His Lys Asn Ala Phe Asn Asn Leu Lys Ala Arg Ala Arg Ile Ala Asn
 130 135 140
 Asn Pro Trp His Cys Asp Cys Thr Leu Gln Gln Val Leu Arg Ser Met
 145 150 155 160
 Ala Ser Asn His Glu Thr Ala His Asn Val Ile Cys Lys Thr Ser Val
 165 170 175
 Leu Asp Glu His Ala Gly Arg Pro Phe Leu Asn Ala Ala Asn Asp Ala
 180 185 190
 Asp Leu Cys Asn Leu Pro Lys Lys Thr Thr Asp Tyr Ala Met Leu Val
 195 200 205
 Thr Met Phe Gly Trp Phe Thr Met Val Ile Ser Tyr Val Val Tyr Tyr
 210 215 220
 Val Arg Gln Asn Gln Glu Asp Ala Arg Arg His Leu Glu Tyr Leu Lys
 225 230 235 240
 Ser Leu Pro Ser Arg Gln Lys Lys Ala Asp Glu Pro Asp Asp Ile Ser
 245 250 255
 Thr Val Val

<210> 72

<211> 2290

<212> DNA

<213> Homo sapiens

<400> 72

```

accgagccga gcggaccgaa ggcgcgccc agatgcaggt gagcaagagg atgctggcgg 60
ggggcgtgag gagcatgccc agccccctcc tggcctgctg gcagcccatc ctctgctgg 120
tgctgggctc agtgctgtca ggctcggcca cgggctgccc gcccgcctgc gactgctccg 180
cccaggaccg cgctgtgctg tgcacccgca agtgctttgt ggcagtcccc gagggcatcc 240
ccaccgagac gcgcctgctg gacctaggca agaaccgcat caaaacgctc aaccaggacg 300
agtgcgccag cttcccgcac ctggaggagc tggagctcaa cgagaacatc gtgagcgccg 360
tgagagcccg cgcttcaac aacctcttca acctccggac gctgggtctc cgcagcaacc 420
gcctgaagct catcccgcta ggcgtcttca ctggcctcag caacctgacc aagcaggaca 480
tcagcgagaa caagatcggt atcctactgg actacatggt tcaggacctg tacaacctca 540
agtcaactgga gggtggcgac aatgacctcg tctacatctc tcaccgcgcc ttcagcgggc 600
tcaacagcct ggagcagctg acgctggaga aatgcaacct gacctccatc cccaccgagg 660
cgctgtccca cctgcacggc ctcatcgctc tgaggtcccg gcacctcaac atcaatgcca 720
tccgggacta ctcttcaag aggtgtgacc gactcaaggt cttggagatc tcccactggc 780
cctacttgga caccatgaca cccaactgcc tctacggcct caacctgacg tccctgtcca 840
tcacacactg caatctgacc gctgtgccct acctggcctg ccgccaccta gtctatctcc 900
gcttcctcaa cctctcctac aaccccatca gcaccattga gggctccatg ttgcatgagc 960
tgctccgggt gcaggagatc cagctgggtg gcgggcagct ggcggtgggt gagccctatg 1020
ccttccgcgg cctcaactac ctgcgcgtgc tcaatgtctc tggcaaccag ctgaccacac 1080
tgaggagaa acgtcttccac tgggtgggca acctggagac actcatcctg gactccaacc 1140
cgctggcctg cgactgtcgg ctctgtggg tgttccggcg ccgctggcgg ctcaacttca 1200
accggcagca gcccacgtgc gccacgccc agtttgtcca gggcaaggag ttcaaggact 1260
tccctgatgt gctactgccc aactacttca cctgcgcgcg cggccgcac cgggaccgca 1320
aggcccagca ggtgtttgtg gacgagggcc acacggtgca gtttgtgtgc cgggccgatg 1380
gcgaccgcc gcccgcac cctctggctct caccgcgaaa gcacctggtc tcagccaaga 1440
gcaatgggcg gctcacagtc ttccctgatg gcacgctgga ggtgcgctac gccaggtac 1500
aggacaacgg cacgtacctg tgcacgcgg ccaacgcggg cggcaacgac tccatgcccg 1560
cccacctgca tgtgcgcagc tactcgcccc actggcccca tcagcccaac aagaccttcg 1620
ctttcatctc caaccagccg ggcgagggag aggcccaacag caccgcgcgc actgtgcctt 1680
tccccttcga catcaagacc ctcatcatcg ccaccacat gggcttcac tctttcctgg 1740
gcgtcgtcct cttctgctcg gtgctgctgt ttctctggag ccggggcaag ggcaacacaa 1800
agcacaacat cgagatcgag tatgtgcccc gaaagtcgga cgcaggcatc agctccgccc 1860
acgcgcccc caagtccaac atgaagatga tataggccg gggcgggggg cagggacccc 1920
cggcgggccg ggcaggggaa ggggcctggg cgccacctgc tcaacttcca gtccctccca 1980
cctcctccct accttctac aacgcttctc tttctccctc ccgcctccgt cccctgctgc 2040
ccccgcgag cctcaccac ctgccctcct tctaccagga cctcagaagc ccagacctgg 2100
ggacccacc tacacagggg cattgacaga ctggagttga aagccgacga accgacacgc 2160
ggcagagtca ataattcaat aaaaaagtta cgaactttct ctgtaacttg ggtttcaata 2220
attatggatt tttatgaaaa cttgaaataa taaaaagaga aaaaaactaa aaaaaaaaaa 2280
aaaaaaaaa 2290

```

<210> 73

<211> 620

<212> PRT

<213> Homo sapiens

<400> 73

```

Met Gln Val Ser Lys Arg Met Leu Ala Gly Gly Val Arg Ser Met Pro
1           5           10          15

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Pro | Leu | Leu | Ala | Cys | Trp | Gln | Pro | Ile | Leu | Leu | Leu | Val | Leu | Gly |
| | | 20 | | | | | | 25 | | | | 30 | | | |
| Ser | Val | Leu | Ser | Gly | Ser | Ala | Thr | Gly | Cys | Pro | Pro | Arg | Cys | Glu | Cys |
| | | 35 | | | | | | 40 | | | | 45 | | | |
| Ser | Ala | Gln | Asp | Arg | Ala | Val | Leu | Cys | His | Arg | Lys | Cys | Phe | Val | Ala |
| | | 50 | | | | | | 55 | | | | 60 | | | |
| Val | Pro | Glu | Gly | Ile | Pro | Thr | Glu | Thr | Arg | Leu | Leu | Asp | Leu | Gly | Lys |
| 65 | | | | | | 70 | | | | | | 75 | | 80 | |
| Asn | Arg | Ile | Lys | Thr | Leu | Asn | Gln | Asp | Glu | Phe | Ala | Ser | Phe | Pro | His |
| | | | | 85 | | | | | | 90 | | | | 95 | |
| Leu | Glu | Glu | Leu | Glu | Leu | Asn | Glu | Asn | Ile | Val | Ser | Ala | Val | Glu | Pro |
| | | 100 | | | | | | 105 | | | | 110 | | | |
| Gly | Ala | Phe | Asn | Asn | Leu | Phe | Asn | Leu | Arg | Thr | Leu | Gly | Leu | Arg | Ser |
| | | 115 | | | | | | 120 | | | | 125 | | | |
| Asn | Arg | Leu | Lys | Leu | Ile | Pro | Leu | Gly | Val | Phe | Thr | Gly | Leu | Ser | Asn |
| 130 | | | | | | 135 | | | | | | 140 | | | |
| Leu | Thr | Lys | Gln | Asp | Ile | Ser | Glu | Asn | Lys | Ile | Val | Ile | Leu | Leu | Asp |
| 145 | | | | 150 | | | | | | 155 | | | | 160 | |
| Tyr | Met | Phe | Gln | Asp | Leu | Tyr | Asn | Leu | Lys | Ser | Leu | Glu | Val | Gly | Asp |
| | | | | 165 | | | | | | 170 | | | | 175 | |
| Asn | Asp | Leu | Val | Tyr | Ile | Ser | His | Arg | Ala | Phe | Ser | Gly | Leu | Asn | Ser |
| | | 180 | | | | | | 185 | | | | 190 | | | |
| Leu | Glu | Gln | Leu | Thr | Leu | Glu | Lys | Cys | Asn | Leu | Thr | Ser | Ile | Pro | Thr |
| | | 195 | | | | | | 200 | | | | 205 | | | |
| Glu | Ala | Leu | Ser | His | Leu | His | Gly | Leu | Ile | Val | Leu | Arg | Leu | Arg | His |
| 210 | | | | | | 215 | | | | | | 220 | | | |
| Leu | Asn | Ile | Asn | Ala | Ile | Arg | Asp | Tyr | Ser | Phe | Lys | Arg | Leu | Tyr | Arg |
| 225 | | | | 230 | | | | | | 235 | | | | 240 | |
| Leu | Lys | Val | Leu | Glu | Ile | Ser | His | Trp | Pro | Tyr | Leu | Asp | Thr | Met | Thr |
| | | | | 245 | | | | | | 250 | | | | 255 | |
| Pro | Asn | Cys | Leu | Tyr | Gly | Leu | Asn | Leu | Thr | Ser | Leu | Ser | Ile | Thr | His |
| | | 260 | | | | | | 265 | | | | 270 | | | |
| Cys | Asn | Leu | Thr | Ala | Val | Pro | Tyr | Leu | Ala | Val | Arg | His | Leu | Val | Tyr |
| | | 275 | | | | | | 280 | | | | 285 | | | |
| Leu | Arg | Phe | Leu | Asn | Leu | Ser | Tyr | Asn | Pro | Ile | Ser | Thr | Ile | Glu | Gly |
| 290 | | | | | | 295 | | | | | | 300 | | | |

Ser Met Leu His Glu Leu Leu Arg Leu Gln Glu Ile Gln Leu Val Gly
 305 310 315 320
 Gly Gln Leu Ala Val Val Glu Pro Tyr Ala Phe Arg Gly Leu Asn Tyr
 325 330 335
 Leu Arg Val Leu Asn Val Ser Gly Asn Gln Leu Thr Thr Leu Glu Glu
 340 345 350
 Ser Val Phe His Ser Val Gly Asn Leu Glu Thr Leu Ile Leu Asp Ser
 355 360 365
 Asn Pro Leu Ala Cys Asp Cys Arg Leu Leu Trp Val Phe Arg Arg Arg
 370 375 380
 Trp Arg Leu Asn Phe Asn Arg Gln Gln Pro Thr Cys Ala Thr Pro Glu
 385 390 395 400
 Phe Val Gln Gly Lys Glu Phe Lys Asp Phe Pro Asp Val Leu Leu Pro
 405 410 415
 Asn Tyr Phe Thr Cys Arg Arg Ala Arg Ile Arg Asp Arg Lys Ala Gln
 420 425 430
 Gln Val Phe Val Asp Glu Gly His Thr Val Gln Phe Val Cys Arg Ala
 435 440 445
 Asp Gly Asp Pro Pro Pro Ala Ile Leu Trp Leu Ser Pro Arg Lys His
 450 455 460
 Leu Val Ser Ala Lys Ser Asn Gly Arg Leu Thr Val Phe Pro Asp Gly
 465 470 475 480
 Thr Leu Glu Val Arg Tyr Ala Gln Val Gln Asp Asn Gly Thr Tyr Leu
 485 490 495
 Cys Ile Ala Ala Asn Ala Gly Gly Asn Asp Ser Met Pro Ala His Leu
 500 505 510
 His Val Arg Ser Tyr Ser Pro Asp Trp Pro His Gln Pro Asn Lys Thr
 515 520 525
 Phe Ala Phe Ile Ser Asn Gln Pro Gly Glu Gly Glu Ala Asn Ser Thr
 530 535 540
 Arg Ala Thr Val Pro Phe Pro Phe Asp Ile Lys Thr Leu Ile Ile Ala
 545 550 555 560
 Thr Thr Met Gly Phe Ile Ser Phe Leu Gly Val Val Leu Phe Cys Leu
 565 570 575
 Val Leu Leu Phe Leu Trp Ser Arg Gly Lys Gly Asn Thr Lys His Asn

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 580 | | 585 | | 590 | | | | | | | | | | |
| Ile | Glu | Ile | Glu | Tyr | Val | Pro | Arg | Lys | Ser | Asp | Ala | Gly | Ile | Ser | Ser |
| | 595 | | | | | | 600 | | | | | 605 | | | |
| Ala | Asp | Ala | Pro | Arg | Lys | Phe | Asn | Met | Lys | Met | Ile | | | | |
| | 610 | | | | | | 615 | | | | 620 | | | | |

<210> 74

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 74

tcacctggag cctttattgg cc

22

<210> 75

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 75

ataccagcta taaccaggct gcg

23

<210> 76

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 76

caacagtaag tggtttgatg ctcttccaaa tctagagatt ctgatgattg
gg

50

52

<210> 77

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 77
 ccatgtgtct cctcctacaa ag 22

<210> 78
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 78
 gggaatagat gtgatctgat tgg 23

<210> 79
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 79
 cacctgtagc aatgcaaatc tcaaggaaat acctagagat cttcctcctg 50

<210> 80
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 80
 agcaaccgcc tgaagctcat cc 22

<210> 81
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 81
 aaggcgcggt gaaagatgta gacg 24

<210> 82

<211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 82
 gactacatgt ttcaggacct gtacaacctc aagtcactgg aggttggcga 50

<210> 83
 <211> 1685
 <212> DNA
 <213> Homo sapiens

<400> 83
 cccacgcgtc cgcacctcgg ccccgggctc cgaagcggct cggggggcgc ctttcgggtca 60
 acatcgtagt ccacccccctc cccatcccca gcccccgagg attcaggctc gccagcgccc 120
 agccagggag ccggccggga agcgcgatgg gggccccagc cgcctcgctc ctgctcctgc 180
 tcctgctgtt cgctgctgctc tgggcgcccc gcgggggccaa cctctcccag gacgacagcc 240
 agccctggac atctgatgaa acagtgggtg ctgggtggcac cgtgggtgctc aagtgccaaag 300
 tgaaagatca cgaggactca tccctgcaat ggtctaacc tgcctcagcag actctctact 360
 ttggggagaa gagagccctt cgagataatc gaattcagct ggttacctct acgccccacg 420
 agctcagcat cagcatcagc aatgtggccc tggcagacga gggcgagtag acctgctcaa 480
 tcttcactat gcctgtgcga actgccaagt cctcgctcac tgtgctagga attccacaga 540
 agcccatcat cactggttat aaatcttcat tacgggaaaa agacacagcc accctaaact 600
 gtcagctctc tgggagcaag cctgcagccc ggctcacctg gagaaagggg gaccaagaac 660
 tccacggaga accaaccggc atacaggaag atcccaatgg taaaaccttc actgtcagca 720
 gctcggtgac attccagggt acccgggagg atgatggggc gagcatcgtg tgctctgtga 780
 accatgaatc tctaaaggga gctgacagat ccacctctca acgcattgaa gttttataca 840
 caccaactgc gatgattagg ccagaccctc cccatcctcg tgaggggccag aagctggtgc 900
 tacactgtga gggtcgcggc aatccagtc cccagcagta cctatgggag aaggagggca 960
 gtgtgccacc cctgaagatg acccaggaga gtgcccctgat cttccctttc ctcaacaaga 1020
 gtgacagtgg cacctacggc tgcacagcca ccagcaacat gggcagctac aaggcctact 1080
 acaccctcaa tgtaaatgac cccagtcagg tgcctcctc ctccagcacc taccacgcca 1140
 tcatcgggtg gatcgtggct ttcatgtct tctgctgct catcatgctc atcttctctg 1200
 gccactactt gatccggcac aaaggaacct acctgacaca tgaggcaaaa ggctccgacg 1260
 atgtccaga cgcggacacg gccatcatca atgcagaagg cgggcagtca ggaggggacg 1320
 acaagaagga atatttcac tagaggcgcc tgcccacttc ctgcgcccc cagggggcct 1380
 gtggggactg ctggggccgt caccaaccgg gacttgtaca gagcaaccgc agggccgccc 1440
 ctcccgcttg ctcccagcc caccacccc cctgtacaga atgtctgctt tgggtgcggg 1500
 tttgtactcg gtttggaatg gggaggagg agggcggggg gaggggaggg ttgccctcag 1560
 ccctttccgt ggcttctctg catttgggtt attattatt ttgtaacaat cccaaatcaa 1620
 atctgtctcc aggttgagga ggcaggagcc ctgggggtgag aaaagcaaaa aacaaacaaa 1680
 aaaca 1685

<210> 84
 <211> 398
 <212> PRT
 <213> Homo sapiens

<400> 84

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Pro | Ala | Ala | Ser | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Phe | Ala |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Cys | Cys | Trp | Ala | Pro | Gly | Gly | Ala | Asn | Leu | Ser | Gln | Asp | Asp | Ser | Gln |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Pro | Trp | Thr | Ser | Asp | Glu | Thr | Val | Val | Ala | Gly | Gly | Thr | Val | Val | Leu |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Cys | Gln | Val | Lys | Asp | His | Glu | Asp | Ser | Ser | Leu | Gln | Trp | Ser | Asn |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Pro | Ala | Gln | Gln | Thr | Leu | Tyr | Phe | Gly | Glu | Lys | Arg | Ala | Leu | Arg | Asp |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Asn | Arg | Ile | Gln | Leu | Val | Thr | Ser | Thr | Pro | His | Glu | Leu | Ser | Ile | Ser |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ile | Ser | Asn | Val | Ala | Leu | Ala | Asp | Glu | Gly | Glu | Tyr | Thr | Cys | Ser | Ile |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Phe | Thr | Met | Pro | Val | Arg | Thr | Ala | Lys | Ser | Leu | Val | Thr | Val | Leu | Gly |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ile | Pro | Gln | Lys | Pro | Ile | Ile | Thr | Gly | Tyr | Lys | Ser | Ser | Leu | Arg | Glu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Lys | Asp | Thr | Ala | Thr | Leu | Asn | Cys | Gln | Ser | Ser | Gly | Ser | Lys | Pro | Ala |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Ala | Arg | Leu | Thr | Trp | Arg | Lys | Gly | Asp | Gln | Glu | Leu | His | Gly | Glu | Pro |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Thr | Arg | Ile | Gln | Glu | Asp | Pro | Asn | Gly | Lys | Thr | Phe | Thr | Val | Ser | Ser |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Ser | Val | Thr | Phe | Gln | Val | Thr | Arg | Glu | Asp | Asp | Gly | Ala | Ser | Ile | Val |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Cys | Ser | Val | Asn | His | Glu | Ser | Leu | Lys | Gly | Ala | Asp | Arg | Ser | Thr | Ser |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Gln | Arg | Ile | Glu | Val | Leu | Tyr | Thr | Pro | Thr | Ala | Met | Ile | Arg | Pro | Asp |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Pro | Pro | His | Pro | Arg | Glu | Gly | Gln | Lys | Leu | Leu | Leu | His | Cys | Glu | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Gly | Asn | Pro | Val | Pro | Gln | Gln | Tyr | Leu | Trp | Glu | Lys | Glu | Gly | Ser |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Val | Pro | Pro | Leu | Lys | Met | Thr | Gln | Glu | Ser | Ala | Leu | Ile | Phe | Pro | Phe |
| | | 275 | | | | | 280 | | | | | 285 | | | |

Leu Asn Lys Ser Asp Ser Gly Thr Tyr Gly Cys Thr Ala Thr Ser Asn
 290 295 300

Met Gly Ser Tyr Lys Ala Tyr Tyr Thr Leu Asn Val Asn Asp Pro Ser
 305 310 315 320

Pro Val Pro Ser Ser Ser Ser Thr Tyr His Ala Ile Ile Gly Gly Ile
 325 330 335

Val Ala Phe Ile Val Phe Leu Leu Leu Ile Met Leu Ile Phe Leu Gly
 340 345 350

His Tyr Leu Ile Arg His Lys Gly Thr Tyr Leu Thr His Glu Ala Lys
 355 360 365

Gly Ser Asp Asp Ala Pro Asp Ala Asp Thr Ala Ile Ile Asn Ala Glu
 370 375 380

Gly Gly Gln Ser Gly Gly Asp Asp Lys Lys Glu Tyr Phe Ile
 385 390 395

<210> 85

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 85

gctaggaatt ccacagaagc cc

22

<210> 86

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 86

aacctggaat gtcaccgagc tg

22

<210> 87

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

oligonucleotide probe

<400> 87
cctagcacag tgacgaggga cttggc 26

<210> 88
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 88
aagacacagc caccctaaac tgtcagtctt ctgggagcaa gcctgcagcc 50

<210> 89
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 89
gccctggcag acgagggcga gtacacctgc tcaatcttca ctatgcctgt 50

<210> 90
<211> 2755
<212> DNA
<213> Homo sapiens

<400> 90
gggggttagg gaggaaggaa tccaccccca ccccccaaa cccttttctt ctcttttcct 60
ggcttcggac attggagcac taaatgaact tgaatttgtt ctgtggcgag caggatggtc 120
gctgttactt tgtgatgaga tcggggatga attgtctgct ttaaaaatgc tgctttggat 180
tctgttgctg gagacgtctc tttgttttgc cgctggaaac gttacagggg acgtttgcaa 240
agagaagatc tgttcctgca atgagataga aggggacctc cacgtagact gtgaaaaaaaa 300
gggcttcaca agtctgcagc gtttcactgc cccgacttcc cagttttacc atttatttct 360
gcatggcaat tccctcactc gacttttccc taatgagttc gctaactttt ataatgcggg 420
tagtttgcac atggaaaaca atggcttgca tgaaatcggt ccgggggctt ttctggggct 480
gcagctggtg aaaaggctgc acatcaacaa caacaagatc aagtcttttc gaaagcagac 540
ttttctgggg ctggacgacg tggaaatatc ccaggtgat ttttaatttat tacgagatat 600
agaccggggg gccttcaggg acttgaacaa gctggagggtg ctcattttaa atgacaatct 660
catcagcacc ctacctgcca acgtgttcca gtatgtgccc atcaccacc tcgacctccg 720
gggtaacagg ctgaaaacgc tgccctatga ggagggtctt gagcaaatcc ctgggtattgc 780
ggagatcctg ctagaggata acccttgagg ctgcacctgt gatctgctct ccctgaaaga 840
atggctggaa aacattccca agaatgccct gatcggccga gtggtctgctg aagccccac 900
cagatgcag ggtaaagacc tcaatgaaac caccgaacag gacttgtgtc ctttgaaaaa 960
ccgagtggat tctagtctcc cggcgcctcc tgcccaagaa gagacctttg ctctgggacc 1020
cctgccaaact cttttcaaga caaatgggca agaggatcat gccacaccag ggtctgctcc 1080

```

aaacggaggt acaaagatcc caggcaactg gcagatcaaa atcagaccca cagcagcgat 1140
agcgacgggt agctccagga acaaaccctt agctaacagt ttaccctgcc ctgggggctg 1200
cagctgcgac cacatcccag ggtcgggttt aaagatgaac tgcaacaaca ggaacgtgag 1260
cagcttggct gatttgaagc ccaagctctc taacgtgcag gagcttttcc tacgagataa 1320
caagatccac agcatccgaa aatcgcaact tgtggattac aagaacctca ttctgttgga 1380
tctgggcaac aataacatcg ctactgtaga gaacaacact ttcaagaacc ttttggacct 1440
caggtggcta tacatggata gcaattacct ggacacgtg tcccgggaga aattcgcggg 1500
gctgcaaaac cttagagtacc tgaacgtgga gtacaacgt atccagctca tcctcccggg 1560
cactttcaat gccatgcccc aactgaggat cctcattctc aacaacaacc tgctgaggtc 1620
cctgcctgtg gacgtgttcg ctgggggtctc gctctctaaa ctcagcctgc acaacaatta 1680
cttcatgtac ctcccgggtg caggggtgct ggaccagtta acctccatca tcagataga 1740
cctccacgga aacccctggg agtgctcctg cacaattgtg cctttcaagc agtgggcaga 1800
acgcttgggt tccgaagtgc tgatgagcga cctcaagtgt gagacgccg tgaacttctt 1860
tagaaaggat ttcattgctc tctccaatga cgagatctgc cctcagctgt acgctaggat 1920
ctcgcccacg ttaacttcgc acagtaaaaa cagcactggg ttggcggaga ccgggacgca 1980
ctccaactcc tacctagaca ccagcagggt gtccatctcg gtgttggtcc cgggactgct 2040
gctggtgttt gtcacctccg ccttcaccgt ggtgggcatg ctctgttcta tcctgaggaa 2100
ccgaaagcgg tccaagagac gagatgccaa ctctcccgcg tccgagatta attccctaca 2160
gacagtctgt gactcttctt actggcacia tgggccttac aacgcagatg gggccacag 2220
agtgtatgac tgtggctctc actcgctctc agactaagac cccaaccca ataggggagg 2280
gcagagggaa ggcgatacat ccttccccac cgcaggcacc ccgggggctg gagggcgctg 2340
taccaaaatc cccgcgccat cagcctggat gggcataagt agataaataa ctgtgagctc 2400
gcacaaccga aagggcctga ccccttactt agctccctcc ttgaaacaaa gagcagactg 2460
tggagagctg ggagagcgca gccagctcgc tctttgctga gagcccttt tgacagaaag 2520
cccagcacga ccctgctgga agaactgaca gtgcctcgc cctcgcccc ggggcctgtg 2580
gggttgatg ccgcggttct atacatata acatataatc acatctatat agagagatag 2640
atatctatct tccccctgtg gattagcccc gtgatggctc cctgttggct acgcagggat 2700
gggcagttgc acgaaggcat gaatgtattg taaataagta actttgactt ctgac 2755

```

<210> 91

<211> 696

<212> PRT

<213> Homo sapiens

<400> 91

```

Met Leu Leu Trp Ile Leu Leu Leu Glu Thr Ser Leu Cys Phe Ala Ala
  1                      5                      10                      15

```

```

Gly Asn Val Thr Gly Asp Val Cys Lys Glu Lys Ile Cys Ser Cys Asn
          20                      25                      30

```

```

Glu Ile Glu Gly Asp Leu His Val Asp Cys Glu Lys Lys Gly Phe Thr
          35                      40                      45

```

```

Ser Leu Gln Arg Phe Thr Ala Pro Thr Ser Gln Phe Tyr His Leu Phe
          50                      55                      60

```

```

Leu His Gly Asn Ser Leu Thr Arg Leu Phe Pro Asn Glu Phe Ala Asn
          65                      70                      75                      80

```

```

Phe Tyr Asn Ala Val Ser Leu His Met Glu Asn Asn Gly Leu His Glu
          85                      90                      95

```

Ile Val Pro Gly Ala Phe Leu Gly Leu Gln Leu Val Lys Arg Leu His
 100 105 110
 Ile Asn Asn Asn Lys Ile Lys Ser Phe Arg Lys Gln Thr Phe Leu Gly
 115 120 125
 Leu Asp Asp Leu Glu Tyr Leu Gln Ala Asp Phe Asn Leu Leu Arg Asp
 130 135 140
 Ile Asp Pro Gly Ala Phe Gln Asp Leu Asn Lys Leu Glu Val Leu Ile
 145 150 155 160
 Leu Asn Asp Asn Leu Ile Ser Thr Leu Pro Ala Asn Val Phe Gln Tyr
 165 170 175
 Val Pro Ile Thr His Leu Asp Leu Arg Gly Asn Arg Leu Lys Thr Leu
 180 185 190
 Pro Tyr Glu Glu Val Leu Glu Gln Ile Pro Gly Ile Ala Glu Ile Leu
 195 200 205
 Leu Glu Asp Asn Pro Trp Asp Cys Thr Cys Asp Leu Leu Ser Leu Lys
 210 215 220
 Glu Trp Leu Glu Asn Ile Pro Lys Asn Ala Leu Ile Gly Arg Val Val
 225 230 235 240
 Cys Glu Ala Pro Thr Arg Leu Gln Gly Lys Asp Leu Asn Glu Thr Thr
 245 250 255
 Glu Gln Asp Leu Cys Pro Leu Lys Asn Arg Val Asp Ser Ser Leu Pro
 260 265 270
 Ala Pro Pro Ala Gln Glu Glu Thr Phe Ala Pro Gly Pro Leu Pro Thr
 275 280 285
 Pro Phe Lys Thr Asn Gly Gln Glu Asp His Ala Thr Pro Gly Ser Ala
 290 295 300
 Pro Asn Gly Gly Thr Lys Ile Pro Gly Asn Trp Gln Ile Lys Ile Arg
 305 310 315 320
 Pro Thr Ala Ala Ile Ala Thr Gly Ser Ser Arg Asn Lys Pro Leu Ala
 325 330 335
 Asn Ser Leu Pro Cys Pro Gly Gly Cys Ser Cys Asp His Ile Pro Gly
 340 345 350
 Ser Gly Leu Lys Met Asn Cys Asn Asn Arg Asn Val Ser Ser Leu Ala
 355 360 365
 Asp Leu Lys Pro Lys Leu Ser Asn Val Gln Glu Leu Phe Leu Arg Asp
 370 375 380

Asn Lys Ile His Ser Ile Arg Lys Ser His Phe Val Asp Tyr Lys Asn
 385 390 395 400
 Leu Ile Leu Leu Asp Leu Gly Asn Asn Asn Ile Ala Thr Val Glu Asn
 405 410 415
 Asn Thr Phe Lys Asn Leu Leu Asp Leu Arg Trp Leu Tyr Met Asp Ser
 420 425 430
 Asn Tyr Leu Asp Thr Leu Ser Arg Glu Lys Phe Ala Gly Leu Gln Asn
 435 440 445
 Leu Glu Tyr Leu Asn Val Glu Tyr Asn Ala Ile Gln Leu Ile Leu Pro
 450 455 460
 Gly Thr Phe Asn Ala Met Pro Lys Leu Arg Ile Leu Ile Leu Asn Asn
 465 470 475 480
 Asn Leu Leu Arg Ser Leu Pro Val Asp Val Phe Ala Gly Val Ser Leu
 485 490 495
 Ser Lys Leu Ser Leu His Asn Asn Tyr Phe Met Tyr Leu Pro Val Ala
 500 505 510
 Gly Val Leu Asp Gln Leu Thr Ser Ile Ile Gln Ile Asp Leu His Gly
 515 520 525
 Asn Pro Trp Glu Cys Ser Cys Thr Ile Val Pro Phe Lys Gln Trp Ala
 530 535 540
 Glu Arg Leu Gly Ser Glu Val Leu Met Ser Asp Leu Lys Cys Glu Thr
 545 550 555 560
 Pro Val Asn Phe Phe Arg Lys Asp Phe Met Leu Leu Ser Asn Asp Glu
 565 570 575
 Ile Cys Pro Gln Leu Tyr Ala Arg Ile Ser Pro Thr Leu Thr Ser His
 580 585 590
 Ser Lys Asn Ser Thr Gly Leu Ala Glu Thr Gly Thr His Ser Asn Ser
 595 600 605
 Tyr Leu Asp Thr Ser Arg Val Ser Ile Ser Val Leu Val Pro Gly Leu
 610 615 620
 Leu Leu Val Phe Val Thr Ser Ala Phe Thr Val Val Gly Met Leu Val
 625 630 635 640
 Phe Ile Leu Arg Asn Arg Lys Arg Ser Lys Arg Arg Asp Ala Asn Ser
 645 650 655
 Ser Ala Ser Glu Ile Asn Ser Leu Gln Thr Val Cys Asp Ser Ser Tyr

660 665 670

Trp His Asn Gly Pro Tyr Asn Ala Asp Gly Ala His Arg Val Tyr Asp
675 680 685

Cys Gly Ser His Ser Leu Ser Asp
690 695

<210> 92
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 92
gttggatctg ggcaacaata ac 22

<210> 93
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 93
attgttgtgc aggctgagtt taag 24

<210> 94
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 94
ggtggctata catggatagc aattacctgg acacgctgtc ccggg 45

<210> 95
<211> 2226
<212> DNA
<213> Homo sapiens

<400> 95
agtcgactgc gtccctgtga cccggcgcca gctgtgttcc tgaccccaga ataactcagg 60
gctgcaccgg gcctggcagc gctccgcaca catttctgt cgcggcctaa gggaaactgt 120
tggccgctgg gcccgcgggg ggattcttgg cagttggggg gtccgtcggg agcgagggcg 180

```

gaggggaagg gagggggaac cgggttgggg aagccagctg tagagggcgg tgaccgcgct 240
ccagacacag ctctgcgtcc tcgagcggga cagatccaag ttgggagcag ctctgcgtgc 300
ggggcctcag agaatgaggc cggcgttcgc cctgtgcctc ctctggcagg cgtctggcc 360
cgggcggggc ggcggcgaac accccactgc cgaccgtgct ggctgctcgg cctcgggggc 420
ctgctacagc ctgcaccacg ctaccatgaa gcggcaggcg gccgaggagg cctgcatect 480
gcgaggtggg gcgctcagca ccgtgcgtgc gggcgccgag ctgcgcgctg tgctcgcgct 540
cctgcgggca ggcccagggc ccggaggggg ctccaaagac ctgctgttct gggtcgcact 600
ggagcgcagg cgttcccact gcaccctgga gaacgagcct ttgcgggggt tctcctggct 660
gtcctccgac cccggcggtc tcgaaagcga cacgctgcag tgggtggagg agccccaacg 720
ctcctgcacc gcgcggagat gcgcggtact ccaggccacc ggtggggctg agcccgagg 780
ctggaaggag atgcgatgcc acctgcgcgc caacggctac ctgtgcaagt accagtttga 840
ggtcttgtgt cctgcgcgcg gccccggggc cgctctaac ttgagctatc gcgcgcctt 900
ccagctgcac agcgcgcgctc tggacttcag tccacctggg accgaggtga gtgcgctctg 960
ccggggacag ctcccgatct cagttacttg catcgcgagc gaaatcggcg ctgcgtggga 1020
caaactctcg ggcgatgtgt tgtgtccctg ccccgggagg tacctccgtg ctggcaaagt 1080
cgcagagctc cctaactgcc tagacgactt gggaggcttt gcctgcgaat gtgctacggg 1140
cttcgagctg ggggaaggac gccgctcttg tgtgaccagt ggggaaggac agccgacct 1200
tggggggacc ggggtgcca ccaggcgcgc gccggccact gcaaccagcc cgtgcccga 1260
gagaacatgg ccaatcaggg tcgacgagaa gctgggagag acaccacttg tccctgaaca 1320
agacaattca gtaacatcta ttcctgagat tcctcgatgg ggatcacaga gcacgatgtc 1380
tacccttcaa atgtcccttc aagccgagtc aaaggccact atcaccccat cagggagcgt 1440
gatttccaag tttaattcta cgacttcctc tgccactcct caggctttcg actcctcctc 1500
tgccgtggtc ttcataattt tgagcacagc agtagtagtg ttggtgatct tgaccatgac 1560
agtactgggg cttgtcaagc tctgctttca cgaaagcccc tcttcccagc caaggaagga 1620
gtctatgggg ccgcggggcc tggagagtga tcctgagccc gctgctttgg gctccagttc 1680
tgcacattgc acaaacaatg gggtgaaagt cggggactgt gatctgcggg acagagcaga 1740
gggtgccttg ctggcggagt cccctcttgg ctctagtgat gcatagggaa acaggggaca 1800
tgggcactcc tgtgaacagt ttttacttt tgatgaaacg gggaaccaag aggaacttac 1860
ttgtgtaact gacaatttct gcagaaatcc cccttcctc aaattccctt tactccactg 1920
aggagctaaa tcagaactgc acactccttc cctgatgata gaggaagtgg aagtgccttt 1980
aggatggtga tactggggga ccgggtagtg ctggggagag atattttctt atgtttattc 2040
ggagaatttg gagaagtgat tgaacttttc aagacattgg aaacaaatag aacacaatat 2100
aatttacatt aaaaaataat ttctaccaa atggaagga aatgttctat gttgttcagg 2160
ctaggagtat attggttcga aatcccaggg aaaaaataa aaataaaaaa ttaaaggatt 2220
gttgat

```

<210> 96

<211> 490

<212> PRT

<213> Homo sapiens

<400> 96

```

Met Arg Pro Ala Phe Ala Leu Cys Leu Leu Trp Gln Ala Leu Trp Pro
  1                      5                      10                     15

```

```

Gly Pro Gly Gly Gly Glu His Pro Thr Ala Asp Arg Ala Gly Cys Ser
                      20                      25                     30

```

```

Ala Ser Gly Ala Cys Tyr Ser Leu His His Ala Thr Met Lys Arg Gln
                      35                      40                     45

```

```

Ala Ala Glu Glu Ala Cys Ile Leu Arg Gly Gly Ala Leu Ser Thr Val
                      50                      55                     60

```

Arg Ala Gly Ala Glu Leu Arg Ala Val Leu Ala Leu Leu Arg Ala Gly
 65 70 75 80
 Pro Gly Pro Gly Gly Gly Ser Lys Asp Leu Leu Phe Trp Val Ala Leu
 85 90 95
 Glu Arg Arg Arg Ser His Cys Thr Leu Glu Asn Glu Pro Leu Arg Gly
 100 105 110
 Phe Ser Trp Leu Ser Ser Asp Pro Gly Gly Leu Glu Ser Asp Thr Leu
 115 120 125
 Gln Trp Val Glu Glu Pro Gln Arg Ser Cys Thr Ala Arg Arg Cys Ala
 130 135 140
 Val Leu Gln Ala Thr Gly Gly Val Glu Pro Ala Gly Trp Lys Glu Met
 145 150 155 160
 Arg Cys His Leu Arg Ala Asn Gly Tyr Leu Cys Lys Tyr Gln Phe Glu
 165 170 175
 Val Leu Cys Pro Ala Pro Arg Pro Gly Ala Ala Ser Asn Leu Ser Tyr
 180 185 190
 Arg Ala Pro Phe Gln Leu His Ser Ala Ala Leu Asp Phe Ser Pro Pro
 195 200 205
 Gly Thr Glu Val Ser Ala Leu Cys Arg Gly Gln Leu Pro Ile Ser Val
 210 215 220
 Thr Cys Ile Ala Asp Glu Ile Gly Ala Arg Trp Asp Lys Leu Ser Gly
 225 230 235 240
 Asp Val Leu Cys Pro Cys Pro Gly Arg Tyr Leu Arg Ala Gly Lys Cys
 245 250 255
 Ala Glu Leu Pro Asn Cys Leu Asp Asp Leu Gly Gly Phe Ala Cys Glu
 260 265 270
 Cys Ala Thr Gly Phe Glu Leu Gly Lys Asp Gly Arg Ser Cys Val Thr
 275 280 285
 Ser Gly Glu Gly Gln Pro Thr Leu Gly Gly Thr Gly Val Pro Thr Arg
 290 295 300
 Arg Pro Pro Ala Thr Ala Thr Ser Pro Val Pro Gln Arg Thr Trp Pro
 305 310 315 320
 Ile Arg Val Asp Glu Lys Leu Gly Glu Thr Pro Leu Val Pro Glu Gln
 325 330 335
 Asp Asn Ser Val Thr Ser Ile Pro Glu Ile Pro Arg Trp Gly Ser Gln

| | | |
|---|-----|-----|
| 340 | 345 | 350 |
| Ser Thr Met Ser Thr Leu Gln Met Ser Leu Gln Ala Glu Ser Lys Ala | | |
| 355 | 360 | 365 |
| Thr Ile Thr Pro Ser Gly Ser Val Ile Ser Lys Phe Asn Ser Thr Thr | | |
| 370 | 375 | 380 |
| Ser Ser Ala Thr Pro Gln Ala Phe Asp Ser Ser Ser Ala Val Val Phe | | |
| 385 | 390 | 395 |
| Ile Phe Val Ser Thr Ala Val Val Val Leu Val Ile Leu Thr Met Thr | | |
| 405 | 410 | 415 |
| Val Leu Gly Leu Val Lys Leu Cys Phe His Glu Ser Pro Ser Ser Gln | | |
| 420 | 425 | 430 |
| Pro Arg Lys Glu Ser Met Gly Pro Pro Gly Leu Glu Ser Asp Pro Glu | | |
| 435 | 440 | 445 |
| Pro Ala Ala Leu Gly Ser Ser Ser Ala His Cys Thr Asn Asn Gly Val | | |
| 450 | 455 | 460 |
| Lys Val Gly Asp Cys Asp Leu Arg Asp Arg Ala Glu Gly Ala Leu Leu | | |
| 465 | 470 | 475 |
| Ala Glu Ser Pro Leu Gly Ser Ser Asp Ala | | |
| 485 | 490 | |

<210> 97

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 97

tggaaggaga tgcgatgcca cctg

24

<210> 98

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 98

tgaccagtgg ggaaggacag

20

<210> 99
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

 <400> 99
 acagagcaga gggcgccttg 20

 <210> 100
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

 <400> 100
 tcagggacaa gtggtgtctc tccc 24

 <210> 101
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

 <400> 101
 tcagggaagg agtgtgcagt tctg 24

 <210> 102
 <211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

 <400> 102
 acagctcccc atctcagtta cttgcatcgc ggacgaaatc ggcgctcgct 50

 <210> 103
 <211> 2026
 <212> DNA
 <213> Homo sapiens

<400> 103

```

cggacgcgtg ggattcagca gtggcctgtg gctgccagag cagctcctca ggggaaacta 60
agcgtcgagt cagacggcac cataatcgcc tttaaaagtg cctccgccct gccggccgcg 120
tatccccggg ctacctgggc cgccccggcg cgggtgcgcg gtgagaggga gcgcgcgggc 180
agccgagcgc cgggtgtgagc cagcgcgtgct gccagtgtga gcggcgggtg gagcgcggtg 240
ggtgcggagg ggcgtgtgtg ccggcgcgcg cgccgtgggg tgcaaaccct gagcgtctac 300
gctgccatga ggggcgcgaa cgccctgggc ccactctgcc tgctgctggc tgccgccacc 360
cagctctcgc ggcagcagtc cccagagaga cctgttttca catgtggtgg cattcttact 420
ggagagtctg gattttattg cagtgaaggt tttcctggag tgtaccctcc aaatagcaaa 480
tgtacttgga aaatcacagt tccgaagga aaagtagtcg ttctcaattt ccgattcata 540
gacctcgaga gtgacaacct gtgccgctat gactttgtgg atgtgtacaa tggccatgcc 600
aatggccagc gcattggccg cttctgtggc actttccggc ctggagccct tgtgtccagt 660
ggcaacaaga tgatggtgca gatgatttct gatgccaaac cagctggcaa tggcttcagt 720
gccatgttct ccgctgctga accaaacgaa agaggggagc agtattgtgg aggactcctt 780
gacagacctt ccgctctttt taaaaccccc aactggccag accgggatta cctgcagga 840
gtcacttggt tgtggcacat tgtagcccca aagaatcagc ttatagaatt aaagtttgag 900
aagtttgatg tggagcgaga taactactgc cगतatgatt atgtggctgt gtttaattggc 960
ggggaagtca acgatgctag aagaattgga aagtattgtg gtgatagtc acctgcgcca 1020
attgtgtctg agagaaatga acttcttatt cagtttttat cagacttaag tttaactgca 1080
gatgggttta ttggtcacta catattcagg ccaaaaaaac tgcctacaac tacagaacag 1140
cctgtcacca ccacattccc tgtaaccacg ggtttaaaac ccaccgtggc cttgtgtcaa 1200
caaaagtgtg gacggacggg gactctggag ggcaattatt gttcaagtga ctttgtatta 1260
gccggcactg ttatcacaac catcactcgc gatgggagtt tgcacgccac agtctcgatc 1320
atcaacatct acaaagaggg aaatttggcg attcagcagg cgggcaagaa catgagtgcc 1380
aggctgactg tcgtctgcaa gcagtgcctt ctctcagaa gaggtctaaa ttacattatt 1440
atgggccaag taggtgaaga tgggcgaggg aaaatcatgc caaacagctt tatcatgatg 1500
ttcaagacca agaatcagaa gctcctggat gccttaaaaa ataagcaatg ttaacagtga 1560
actgtgtcca tttaagctgt attctgccat tgcccttgaa agatctatgt tctctcagta 1620
gaaaaaaaaa tacttataaa attacatatt ctgaaagagg attccgaaag atgggactgg 1680
ttgactcttc acatgatgga ggtatgaggc ctccgagata gctgagggaa gttctttgcc 1740
tgctgtcaga ggagcagcta tctgattgga aacctgccga cttagtgcgg tgataggaag 1800
ctaaaagtgt caagcgttga cagcttgga gcgttttatt atacatctct gtaaaaggat 1860
atttagaat tgagttgtgt gaagatgtca aaaaaagatt ttagaagtgc aatatttata 1920
gtgttatttg tttcaccttc aagcctttgc cctgaggtgt tacaatcttg tcttgcgttt 1980
tctaaatcaa tgcttaataa aatattttta aaggaaaaaa aaaaaa 2026

```

<210> 104

<211> 415

<212> PRT

<213> Homo sapiens

<400> 104

```

Met Arg Gly Ala Asn Ala Trp Ala Pro Leu Cys Leu Leu Leu Ala Ala
  1                      5                      10                     15

Ala Thr Gln Leu Ser Arg Gln Gln Ser Pro Glu Arg Pro Val Phe Thr
                20                      25                     30

Cys Gly Gly Ile Leu Thr Gly Glu Ser Gly Phe Ile Gly Ser Glu Gly
                35                      40                     45

Phe Pro Gly Val Tyr Pro Pro Asn Ser Lys Cys Thr Trp Lys Ile Thr
                50                      55                     60

```

| | | | | | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|
| Val
65 | Pro | Glu | Gly | Lys | Val
70 | Val | Val | Leu | Asn | Phe | Arg | Phe | Ile | Asp | Leu
80 |
| Glu | Ser | Asp | Asn | Leu
85 | Cys | Arg | Tyr | Asp | Phe
90 | Val | Asp | Val | Tyr | Asn
95 | Gly |
| His | Ala | Asn | Gly
100 | Gln | Arg | Ile | Gly | Arg
105 | Phe | Cys | Gly | Thr | Phe
110 | Arg | Pro |
| Gly | Ala | Leu
115 | Val | Ser | Ser | Gly | Asn
120 | Lys | Met | Met | Val | Gln
125 | Met | Ile | Ser |
| Asp | Ala
130 | Asn | Thr | Ala | Gly | Asn
135 | Gly | Phe | Met | Ala | Met
140 | Phe | Ser | Ala | Ala |
| Glu
145 | Pro | Asn | Glu | Arg | Gly
150 | Asp | Gln | Tyr | Cys | Gly
155 | Gly | Leu | Leu | Asp | Arg
160 |
| Pro | Ser | Gly | Ser | Phe
165 | Lys | Thr | Pro | Asn
170 | Trp | Pro | Asp | Arg | Asp
175 | Tyr | Pro |
| Ala | Gly | Val | Thr
180 | Cys | Val | Trp | His | Ile
185 | Val | Ala | Pro | Lys | Asn
190 | Gln | Leu |
| Ile | Glu | Leu
195 | Lys | Phe | Glu | Lys | Phe
200 | Asp | Val | Glu | Arg | Asp
205 | Asn | Tyr | Cys |
| Arg
210 | Tyr | Asp | Tyr | Val | Ala | Val
215 | Phe | Asn | Gly | Gly | Glu
220 | Val | Asn | Asp | Ala |
| Arg
225 | Arg | Ile | Gly | Lys | Tyr
230 | Cys | Gly | Asp | Ser | Pro
235 | Pro | Ala | Pro | Ile | Val
240 |
| Ser | Glu | Arg | Asn
245 | Glu | Leu | Leu | Ile | Gln
250 | Phe | Leu | Ser | Asp | Leu
255 | Ser | Leu |
| Thr | Ala | Asp | Gly
260 | Phe | Ile | Gly | His | Tyr
265 | Ile | Phe | Arg | Pro | Lys
270 | Lys | Leu |
| Pro | Thr | Thr | Thr
275 | Glu | Gln | Pro | Val
280 | Thr | Thr | Thr | Phe
285 | Pro | Val | Thr | Thr |
| Gly
290 | Leu | Lys | Pro | Thr | Val | Ala
295 | Leu | Cys | Gln | Gln | Lys
300 | Cys | Arg | Arg | Thr |
| Gly
305 | Thr | Leu | Glu | Gly | Asn
310 | Tyr | Cys | Ser | Ser | Asp
315 | Phe | Val | Leu | Ala | Gly
320 |
| Thr | Val | Ile | Thr
325 | Thr | Ile | Thr | Arg | Asp | Gly
330 | Ser | Leu | His | Ala
335 | Thr | Val |
| Ser | Ile | Ile | Asn | Ile | Tyr | Lys | Glu | Gly | Asn | Leu | Ala | Ile | Gln | Gln | Ala |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 340 | | 345 | | 350 | | | | | | | | | | |
| Gly | Lys | Asn | Met | Ser | Ala | Arg | Leu | Thr | Val | Val | Cys | Lys | Gln | Cys | Pro |
| | 355 | | | | | | 360 | | | | 365 | | | | |
| Leu | Leu | Arg | Arg | Gly | Leu | Asn | Tyr | Ile | Ile | Met | Gly | Gln | Val | Gly | Glu |
| | 370 | | | | 375 | | | | | 380 | | | | | |
| Asp | Gly | Arg | Gly | Lys | Ile | Met | Pro | Asn | Ser | Phe | Ile | Met | Met | Phe | Lys |
| 385 | | | | | 390 | | | | 395 | | | | | | 400 |
| Thr | Lys | Asn | Gln | Lys | Leu | Leu | Asp | Ala | Leu | Lys | Asn | Lys | Gln | Cys | |
| | | | 405 | | | | 410 | | | | | | 415 | | |

<210> 105

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 105

ccgattcata gacctcgaga gt

22

<210> 106

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 106

gtcaaggagt cctccacaat ac

22

<210> 107

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 107

gtgtacaatg gccatgccaa tggccagcgc attggccgct tctgt

45

<210> 108

<211> 1838

<212> DNA

<213> Homo sapiens

<400> 108

```

cggacgcgtg ggcggacgcg tgggcggccc acggcgcccc cgggctgggg cggctcgcttc 60
ttcctttctcc gtggcctacg aggggtcccca gcctgggtaa agatggcccc atggcccccg 120
aagggcctag tcccagctgt gctctggggc ctcagcctct tcctcaacct cccaggacct 180
atctggctcc agccctctcc acctccccag tctttctccc cgcctcagcc ccattcgtgt 240
catacctgcc ggggactggt tgacagcttt aacaagggcc tggagagaac catccgggac 300
aactttggag gtggaaacac tgcttgggag gaagagaatt tgtccaaata caaagacagt 360
gagaccgcc tggtagaggt gctggagggt gtgtgcagca agtcagactt cgagtgccac 420
cgcctgctgg agctgagtga ggagctggtg gagagctggt ggtttcacaa gcagcaggag 480
gccccggacc tcttccagtg gctgtgctca gattccctga agctctgctg ccccgaggc 540
accttcgggc cctcctgcct tccctgtcct gggggaacag agaggccctg cgggtggctac 600
gggcagtgtg aaggagaagg gacacgaggg ggcagcgggc actgtgactg ccaagccggc 660
tacgggggtg aggcctgtgg ccagtgtggc cttggctact ttgaggcaga acgcaacgcc 720
agccatctgg tatgttcggc ttgttttggc ccctgtgccc gatgctcagg acctgaggaa 780
tcaaactgtt tgcaatgcaa gaagggtggt gccctgcac acctcaagtg tgtagacatt 840
gatgagtgtg gcacagaggg agccaactgt ggagctgacc aattctgcgt gaacactgag 900
ggctcctatg agtgccgaga ctgtgccaa gctgcctag gctgcattgg ggcagggcc 960
ggtcgctgta agaagtgtag ccctggctat cagcagggtg gctccaagtg tctcgatgtg 1020
gatgagtgtg agacagaggt gtgtccggga gagaacaagc agtgtgaaaa caccgagggc 1080
ggttatcgct gcatctgtgc cgagggtac aagcagatgg aaggcatctg tgtgaaggag 1140
cagatcccag agtcagcagg cttctttctca gagatgacag aagacgagtt ggtggtgctg 1200
cagcagatgt tctttggcat catcatctgt gcaactggcca cgctggctgc taaggcgac 1260
ttggtgttca ccgccatctt cattggggct gtggcgcca tgactggcta ctggttgtca 1320
gagcgagtg accgtgtgct ggagggtctt atcaagggca gataatcgcg gccaccacct 1380
gtaggacctc ctcccaccca cgctgcccc agagcttggg ctgcccctct gctggacact 1440
caggacagct tggtttattt ttgagagtgg ggtaagcacc cctacctgcc ttacagagca 1500
gccagggtac ccaggccccg gcagacaagg cccctggggt aaaaagtagc cctgaagggtg 1560
gataccatga gctcttcacc tggcggggac tggcaggctt cacaatgtgt gaatttcaaa 1620
agtttttctt taatggtggc tgctagagct ttggcccctg cttaggatta ggtggtcctc 1680
acagggtggt ggccatcaca gctccctcct gccagctgca tgctgccagt tctgttctg 1740
tgttcaccac atccccacac cccattgcca cttatttatt catctcagga aataaagaaa 1800
ggtcttgtaa agttaaaaa aaaaaaaaa aaaaaaaa 1838

```

<210> 109

<211> 420

<212> PRT

<213> Homo sapiens

<400> 109

```

Met Ala Pro Trp Pro Lys Gly Leu Val Pro Ala Val Leu Trp Gly
  1             5             10             15

Leu Ser Leu Phe Leu Asn Leu Pro Gly Pro Ile Trp Leu Gln Pro Ser
      20             25             30

Pro Pro Pro Gln Ser Ser Pro Pro Pro Gln Pro His Pro Cys His Thr
      35             40             45

Cys Arg Gly Leu Val Asp Ser Phe Asn Lys Gly Leu Glu Arg Thr Ile
      50             55             60

```

Arg Asp Asn Phe Gly Gly Gly Asn Thr Ala Trp Glu Glu Glu Asn Leu
 65 70 75 80
 Ser Lys Tyr Lys Asp Ser Glu Thr Arg Leu Val Glu Val Leu Glu Gly
 85 90 95
 Val Cys Ser Lys Ser Asp Phe Glu Cys His Arg Leu Leu Glu Leu Ser
 100 105 110
 Glu Glu Leu Val Glu Ser Trp Trp Phe His Lys Gln Gln Glu Ala Pro
 115 120 125
 Asp Leu Phe Gln Trp Leu Cys Ser Asp Ser Leu Lys Leu Cys Cys Pro
 130 135 140
 Ala Gly Thr Phe Gly Pro Ser Cys Leu Pro Cys Pro Gly Gly Thr Glu
 145 150 155 160
 Arg Pro Cys Gly Gly Tyr Gly Gln Cys Glu Gly Glu Gly Thr Arg Gly
 165 170 175
 Gly Ser Gly His Cys Asp Cys Gln Ala Gly Tyr Gly Gly Glu Ala Cys
 180 185 190
 Gly Gln Cys Gly Leu Gly Tyr Phe Glu Ala Glu Arg Asn Ala Ser His
 195 200 205
 Leu Val Cys Ser Ala Cys Phe Gly Pro Cys Ala Arg Cys Ser Gly Pro
 210 215 220
 Glu Glu Ser Asn Cys Leu Gln Cys Lys Lys Gly Trp Ala Leu His His
 225 230 235 240
 Leu Lys Cys Val Asp Ile Asp Glu Cys Gly Thr Glu Gly Ala Asn Cys
 245 250 255
 Gly Ala Asp Gln Phe Cys Val Asn Thr Glu Gly Ser Tyr Glu Cys Arg
 260 265 270
 Asp Cys Ala Lys Ala Cys Leu Gly Cys Met Gly Ala Gly Pro Gly Arg
 275 280 285
 Cys Lys Lys Cys Ser Pro Gly Tyr Gln Gln Val Gly Ser Lys Cys Leu
 290 295 300
 Asp Val Asp Glu Cys Glu Thr Glu Val Cys Pro Gly Glu Asn Lys Gln
 305 310 315 320
 Cys Glu Asn Thr Glu Gly Gly Tyr Arg Cys Ile Cys Ala Glu Gly Tyr
 325 330 335
 Lys Gln Met Glu Gly Ile Cys Val Lys Glu Gln Ile Pro Glu Ser Ala
 340 345 350

Gly Phe Phe Ser Glu Met Thr Glu Asp Glu Leu Val Val Leu Gln Gln
 355 360 365

Met Phe Phe Gly Ile Ile Ile Cys Ala Leu Ala Thr Leu Ala Ala Lys
 370 375 380

Gly Asp Leu Val Phe Thr Ala Ile Phe Ile Gly Ala Val Ala Ala Met
 385 390 395 400

Thr Gly Tyr Trp Leu Ser Glu Arg Ser Asp Arg Val Leu Glu Gly Phe
 405 410 415

Ile Lys Gly Arg
 420

<210> 110

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 110

cctggctatc agcaggtggg ctccaagtgt ctcgatgtgg atgagtgtga 50

<210> 111

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 111

attctgcgtg aacactgagg gc 22

<210> 112

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 112

atctgcttgt agccctcggc ac 22

<210> 113

<211> 1616
 <212> DNA
 <213> Homo sapiens

<220>
 <221> modified_base
 <222> (1461)
 <223> a, t, c or g

<400> 113
 tgagaccctc ctgcagcctt ctcaagggac agccccactc tgcctcttgc tcctccaggg 60
 cagcaccatg cagcccctgt ggctctgctg ggcactctgg gtgttgcccc tggccagccc 120
 cggggccgcc ctgaccgggg agcagctcct gggcagcctg ctgcggcagc tgcagctcaa 180
 agaggtgccc acctggaca gggccgacat ggaggagctg gtcatcccca cccacgtgag 240
 ggcccagtac gtggccctgc tgcagcgcag ccacggggac cgctcccgcg gaaagagggt 300
 cagccagagc ttccgagagg tggccggcag gttcctggcg ttggaggcca gcacacacct 360
 gctggtgttc ggcatggagc agcggctgcc gcccaacagc gagctggtgc aggcctgct 420
 gcggctcttc caggagccgg tccccaaagg cgcgctgcac aggcacgggc ggctgtcccc 480
 gcgcagcgcc cggggccggg tgaccgtcga gtggctgcgc gtccgcgacg acggctccaa 540
 ccgcacctcc ctcatcgact ccaggctggt gtccgtccac gagagcggct ggaaggcctt 600
 cgacgtgacc gaggcctgga acttctggca gcagctgagc cggccccggc agccgctgct 660
 gctacagggtg tcggtgcaga gggagcatct gggcccgcgt gcgtccggcg cccacaagct 720
 ggtccgcttt gcctcgcagg gggcgccagc cgggcttggg gagccccagc tggagctgca 780
 caccctggac cttggggact atggagctca gggcgactgt gaccctgaag caccaatgac 840
 cgagggcacc cgctgctgcc gccaggagat gtacattgac ctgcagggga tgaagtgggc 900
 cgagaactgg gtgctggagc ccccgggctt cctggcttat gagtgtgtgg gcacctgccg 960
 gcagcccccg gaggcctgg ccttcaagtg gccgtttctg gggcctcgac agtgcctgc 1020
 ctcgagact gactcgctgc ccatgatcgt cagcatcaag gagggaggca ggaccaggcc 1080
 ccagggtggtc agcctgcccc acatgagggg gcagaagtgc agctgtgcct cggatggtgc 1140
 gctcgtgcca aggaggctcc agccataggc gcctagtgtg gccatcgagg gacttgactt 1200
 gtgtgtgttt ctgaagtgtt cgagggtacc aggagagctg gcgatgactg aactgctgat 1260
 ggacaaatgc tctgtgctct ctagtgagcc ctgaatttgc ttctctgac aagttacctc 1320
 acctaatatt tgcttctcag gaatgagaat ctttgccac tggagagccc ttgctcagtt 1380
 ttctctattc ttattattca ctgcactata ttctaagcac ttacatgtgg agatactgta 1440
 acctgagggc agaaaagcca ntgtgtcatt gtttacttgt cctgtcactg gatctgggct 1500
 aaagtcctcc accaccactc tggacctaa acctgggggt aagtgtgggt tgtgcatccc 1560
 caatccagat aataaagact ttgtaaaaca tgaataaaac acattttatt ctaaaa 1616

<210> 114
 <211> 366
 <212> PRT
 <213> Homo sapiens

<400> 114
 Met Gln Pro Leu Trp Leu Cys Trp Ala Leu Trp Val Leu Pro Leu Ala
 1 5 10 15
 Ser Pro Gly Ala Ala Leu Thr Gly Glu Gln Leu Leu Gly Ser Leu Leu
 20 25 30
 Arg Gln Leu Gln Leu Lys Glu Val Pro Thr Leu Asp Arg Ala Asp Met
 35 40 45

Glu Glu Leu Val Ile Pro Thr His Val Arg Ala Gln Tyr Val Ala Leu
 50 55 60
 Leu Gln Arg Ser His Gly Asp Arg Ser Arg Gly Lys Arg Phe Ser Gln
 65 70 75 80
 Ser Phe Arg Glu Val Ala Gly Arg Phe Leu Ala Leu Glu Ala Ser Thr
 85 90 95
 His Leu Leu Val Phe Gly Met Glu Gln Arg Leu Pro Pro Asn Ser Glu
 100 105 110
 Leu Val Gln Ala Val Leu Arg Leu Phe Gln Glu Pro Val Pro Lys Ala
 115 120 125
 Ala Leu His Arg His Gly Arg Leu Ser Pro Arg Ser Ala Arg Ala Arg
 130 135 140
 Val Thr Val Glu Trp Leu Arg Val Arg Asp Asp Gly Ser Asn Arg Thr
 145 150 155 160
 Ser Leu Ile Asp Ser Arg Leu Val Ser Val His Glu Ser Gly Trp Lys
 165 170 175
 Ala Phe Asp Val Thr Glu Ala Val Asn Phe Trp Gln Gln Leu Ser Arg
 180 185 190
 Pro Arg Gln Pro Leu Leu Leu Gln Val Ser Val Gln Arg Glu His Leu
 195 200 205
 Gly Pro Leu Ala Ser Gly Ala His Lys Leu Val Arg Phe Ala Ser Gln
 210 215 220
 Gly Ala Pro Ala Gly Leu Gly Glu Pro Gln Leu Glu Leu His Thr Leu
 225 230 235 240
 Asp Leu Gly Asp Tyr Gly Ala Gln Gly Asp Cys Asp Pro Glu Ala Pro
 245 250 255
 Met Thr Glu Gly Thr Arg Cys Cys Arg Gln Glu Met Tyr Ile Asp Leu
 260 265 270
 Gln Gly Met Lys Trp Ala Glu Asn Trp Val Leu Glu Pro Pro Gly Phe
 275 280 285
 Leu Ala Tyr Glu Cys Val Gly Thr Cys Arg Gln Pro Pro Glu Ala Leu
 290 295 300
 Ala Phe Lys Trp Pro Phe Leu Gly Pro Arg Gln Cys Ile Ala Ser Glu
 305 310 315 320
 Thr Asp Ser Leu Pro Met Ile Val Ser Ile Lys Glu Gly Gly Arg Thr
 325 330 335

Arg Pro Gln Val Val Ser Leu Pro Asn Met Arg Val Gln Lys Cys Ser
 340 345 350

Cys Ala Ser Asp Gly Ala Leu Val Pro Arg Arg Leu Gln Pro
 355 360 365

<210> 115

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 115

aggactgccca taacttgctt g

21

<210> 116

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 116

ataggagtgtg aagcagcgct gc

22

<210> 117

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 117

tgtgtggaca tagacgagtg ccgctaccgc tactgccagc accgc

45

<210> 118

<211> 1857

<212> DNA

<213> Homo sapiens

<400> 118

gtctgttccc aggagtcctt cggcggctgt tgtgtcagtg gcctgatcgc gatggggaca 60
 aaggcgcaag tcgagaggaa actgttgtgc ctcttcatat tggcgatcct gttgtgctcc 120
 ctggcattgg gcagtgttac agtgcactct tctgaacctg aagtcagaat tcctgagaat 180

```

aatcctgtga agttgtcctg tgcctactcg ggcttttctt ctccccgtgt ggagtgggaag 240
tttgaccaag gagacaccac cagactcggt tgctataata acaagatcac agcttcctat 300
gaggaccggg tgaccttctt gccaaactggt atcaccttca agtccgtgac acgggaagac 360
actgggacat acacttgatg ggtctctgag gaaggcggca acagctatgg ggaggtcaag 420
gtcaagctca tcgtgcttgt gcctccatcc aagcctacag ttaacatccc ctctctgcc 480
accattggga accgggcagt gctgacatgc tcagaacaag atgggtcccc accttctgaa 540
tacacctggt tcaaagatgg gatagtgatg cctacgaatc ccaaaagcac cegtgccttc 600
agcaactctt cctatgtcct gaatcccaca acaggagagc tgggtcttga tccccgtca 660
gcctctgata ctggagaata cagctgtgag gcacggaatg ggtatgggac acccatgact 720
tcaaatgctg tgcgcatgga agctgtggag cggaatgtgg gggatcatcg ggcagccgtc 780
cttgaacccc tgattctcct gggaatcttg gtttttggca tctggtttgc ctatagccga 840
ggccactttg acagaacaaa gaaagggact tcgagtaaga aggtgattta cagccagcct 900
agtgcgccgaa gtgaaggaga attcaaacag acctcgatc tcttgggtgtg agcctggctg 960
gctcaccgcc tatcatctgc atttgcctta ctcaggtgct accggactct ggcccctgat 1020
gtctgtagtt tcacaggatg ccttatttgt cttctacacc ccacagggcc ccctacttct 1080
tcggatgtgt ttttaataat gtcagctatg tgccccatcc tccttcatgc cctccctccc 1140
tttcctacca ctgctgagtg gcctggaact tgtttaaagt gtttattccc catttctttg 1200
agggatcagg aaggaatcct gggatgcca ttgacttccc ttctaagtag acagcaaaaa 1260
tggcgggggt cgcaggaatc tgcactcaac tgcccacctg gctggcaggg atctttgaat 1320
aggtatcttg agcttggttc tgggctcttt ccttgtgtac tgacgaccag ggccagctgt 1380
tctagagcgg gaattagagg ctagagcggc tgaaatgggt gtttgggtgat gacactggg 1440
tccttccatc tctggggccc actctcttct gtcttcccat gggaagtgcc actgggatcc 1500
ctctgccctg tcctcctgaa tacaagctga ctgacattga ctgtgtctgt ggaaaatggg 1560
agctcttgtt gtggagagca tagtaaat ttagagaact tgaagccaaa aggatttaaa 1620
accgtgctc taaagaaaag aaaactggag gctgggcgca gtggctcacg cctgtaatcc 1680
cagaggctga ggcagggcga tcacctgagg tcgggagttc gggatcagcc tgaccaacat 1740
ggagaaaccc tactggaaat acaaagttag ccaggcatgg tggatcatgc ctgtagtccc 1800
agctgctcag gagcctggca acaagagcaa aactccagct caaaaaaaaa aaaaaaa 1857

```

<210> 119

<211> 299

<212> PRT

<213> Homo sapiens

<400> 119

Met Gly Thr Lys Ala Gln Val Glu Arg Lys Leu Leu Cys Leu Phe Ile
1 5 10 15

Leu Ala Ile Leu Leu Cys Ser Leu Ala Leu Gly Ser Val Thr Val His
20 25 30

Ser Ser Glu Pro Glu Val Arg Ile Pro Glu Asn Asn Pro Val Lys Leu
35 40 45

Ser Cys Ala Tyr Ser Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe
50 55 60

Asp Gln Gly Asp Thr Thr Arg Leu Val Cys Tyr Asn Asn Lys Ile Thr
65 70 75 80

Ala Ser Tyr Glu Asp Arg Val Thr Phe Leu Pro Thr Gly Ile Thr Phe
85 90 95

Lys Ser Val Thr Arg Glu Asp Thr Gly Thr Tyr Thr Cys Met Val Ser
 100 105 110
 Glu Glu Gly Gly Asn Ser Tyr Gly Glu Val Lys Val Lys Leu Ile Val
 115 120 125
 Leu Val Pro Pro Ser Lys Pro Thr Val Asn Ile Pro Ser Ser Ala Thr
 130 135 140
 Ile Gly Asn Arg Ala Val Leu Thr Cys Ser Glu Gln Asp Gly Ser Pro
 145 150 155 160
 Pro Ser Glu Tyr Thr Trp Phe Lys Asp Gly Ile Val Met Pro Thr Asn
 165 170 175
 Pro Lys Ser Thr Arg Ala Phe Ser Asn Ser Ser Tyr Val Leu Asn Pro
 180 185 190
 Thr Thr Gly Glu Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly
 195 200 205
 Glu Tyr Ser Cys Glu Ala Arg Asn Gly Tyr Gly Thr Pro Met Thr Ser
 210 215 220
 Asn Ala Val Arg Met Glu Ala Val Glu Arg Asn Val Gly Val Ile Val
 225 230 235 240
 Ala Ala Val Leu Val Thr Leu Ile Leu Leu Gly Ile Leu Val Phe Gly
 245 250 255
 Ile Trp Phe Ala Tyr Ser Arg Gly His Phe Asp Arg Thr Lys Lys Gly
 260 265 270
 Thr Ser Ser Lys Lys Val Ile Tyr Ser Gln Pro Ser Ala Arg Ser Glu
 275 280 285
 Gly Glu Phe Lys Gln Thr Ser Ser Phe Leu Val
 290 295

<210> 120

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 120

tcgcggagct gtgttctgtt tccc

24

<210> 121

<211> 50

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

 <400> 121
 tgatcgcgat ggggacaaag gcgcaagctc gagaggaaac tggtgtgcct 50

 <210> 122
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

 <400> 122
 acacctgggtt caaagatggg 20

 <210> 123
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

 <400> 123
 taggaagagt tgctgaaggc acgg 24

 <210> 124
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

 <400> 124
 ttgccttact caggtgctac 20

 <210> 125
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic

oligonucleotide probe

<400> 125

actcagcagtg gtaggaaag

20

<210> 126

<211> 1210

<212> DNA

<213> Homo sapiens

<400> 126

```

cagcgcgtgg cgggcgcgcg tgtggggaca gcatgagcgg cggttggatg ggcaggttg 60
gagcgtggcg aacagggggt ctgggcctgg cgtgctgct gctgctcggc ctgggactag 120
gcctggaggc cgccgcgagc ccgctttcca ccccgacctc tgcccaggcc gcaggcccca 180
gctcaggctc gtgcccaccc accaagttcc agtgccgcac cagtggctta tgcgtgcccc 240
tcacctggcg ctgcgacagg gacttggact gcagcgatgg cagcgatgag gaggagtgca 300
ggattgagcc atgtacccag aaagggcaat gcccaccgcc ccctggcctc ccctgcccct 360
gcaccggcgt cagtgactgc tctgggggaa ctgacaagaa actgcgcaac tgcagccgcc 420
tggcctgcct agcaggcgag ctccgttgca cgctgagcga tgactgcatt ccactcacgt 480
ggcgtgcga cggccaccca gactgtcccg actccagcga cgagctcggc tgtggaacca 540
atgagatcct cccggaaggg gatgccacaa ccatggggcc ccctgtgacc ctggagagtg 600
tcacctctct caggaatgcc acaaccatgg gggccctgt gaccctggag agtgtccct 660
ctgtcgggaa tgccacatcc tctctgccg gagaccagtc tggaagccca actgcctatg 720
gggttattgc agctgctgcg gtgctcagtg caagcctggc caccgccacc ctctctcttt 780
tgtcctggct ccgagcccag gagcgcctcc gccactggg gttactggg gccatgaagg 840
agtcctgct gctgtcagaa cagaagacct cgctgccctg aggacaagca cttgccacca 900
ccgtcactca gccctgggcg tagccggaca ggaggagagc agtgatgcgg atgggtacct 960
gggcacacca gccctcagag acctgagttc ttctggccac gtggaacctc gaacccgagc 1020
tctgcagaa gtggccctgg agattgaggg tccctggaca ctccctatgg agatccgggg 1080
agctaggatg gggaaacctgc cacagccaga actgaggggc tggccccagg cagctcccag 1140
ggggtagaac ggccctgtgc ttaagacact ccctgctgcc ccgtctgagg gtggcgatta 1200
aagttgcttc                                     1210

```

<210> 127

<211> 282

<212> PRT

<213> Homo sapiens

<400> 127

```

Met Ser Gly Gly Trp Met Ala Gln Val Gly Ala Trp Arg Thr Gly Ala
  1              5              10              15

Leu Gly Leu Ala Leu Leu Leu Leu Gly Leu Gly Leu Gly Leu Glu
      20              25              30

Ala Ala Ala Ser Pro Leu Ser Thr Pro Thr Ser Ala Gln Ala Ala Gly
      35              40              45

Pro Ser Ser Gly Ser Cys Pro Pro Thr Lys Phe Gln Cys Arg Thr Ser
      50              55              60

Gly Leu Cys Val Pro Leu Thr Trp Arg Cys Asp Arg Asp Leu Asp Cys
      65              70              75              80

```

Ser Asp Gly Ser Asp Glu Glu Glu Cys Arg Ile Glu Pro Cys Thr Gln
 85 90 95
 Lys Gly Gln Cys Pro Pro Pro Pro Gly Leu Pro Cys Pro Cys Thr Gly
 100 105 110
 Val Ser Asp Cys Ser Gly Gly Thr Asp Lys Lys Leu Arg Asn Cys Ser
 115 120 125
 Arg Leu Ala Cys Leu Ala Gly Glu Leu Arg Cys Thr Leu Ser Asp Asp
 130 135 140
 Cys Ile Pro Leu Thr Trp Arg Cys Asp Gly His Pro Asp Cys Pro Asp
 145 150 155 160
 Ser Ser Asp Glu Leu Gly Cys Gly Thr Asn Glu Ile Leu Pro Glu Gly
 165 170 175
 Asp Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val Thr Ser
 180 185 190
 Leu Arg Asn Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val
 195 200 205
 Pro Ser Val Gly Asn Ala Thr Ser Ser Ser Ala Gly Asp Gln Ser Gly
 210 215 220
 Ser Pro Thr Ala Tyr Gly Val Ile Ala Ala Ala Val Leu Ser Ala
 225 230 235 240
 Ser Leu Val Thr Ala Thr Leu Leu Leu Leu Ser Trp Leu Arg Ala Gln
 245 250 255
 Glu Arg Leu Arg Pro Leu Gly Leu Leu Val Ala Met Lys Glu Ser Leu
 260 265 270
 Leu Leu Ser Glu Gln Lys Thr Ser Leu Pro
 275 280

<210> 128

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 128

aagttccagt gccgcaccag tggc

<210> 129

<211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 129
 ttggttccac agccgagctc gtcg 24

<210> 130
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 130
 gaggaggagt gcaggattga gccatgtacc cagaaagggc aatgcccacc 50

<210> 131
 <211> 1843
 <212> DNA
 <213> Homo sapiens

<220>
 <221> modified_base
 <222> (1837)
 <223> a, t, c or g

<400> 131
 cccacgcgtc cgggtctcgtc cgctcgcgca gcggcggcag cagaggtcgc gcacagatgc 60
 gggtttagact ggcgggggga ggaggcggag gaggggaagga agctgcatgc atgagaccca 120
 cagactcttg caagctggat gccctctgtg gatgaaagat gtatcatgga atgaacccga 180
 gcaatggaga tggatttcta gaggcagcag agcagcagca gcaacctcag tccccccaga 240
 gactcttggt cgtgatcctg tggtttcagc tggcgtgtg cttcggccct gcacagctca 300
 cgggcggggt cgatgacctt caagtgtgtg ctgaccccg cttcccgag aatggcttca 360
 ggacccccag cggagggggt ttctttgaag gctctgtagc ccgatttcac tgccaagacg 420
 gattcaagct gaagggcgct acaaagagac tgtgtttgaa gcattttaat ggaaccctag 480
 gctggatccc aagtataat tccatctgtg tgcaagaaga ttgccgtatc cctcaaatac 540
 aagatgctga gattcataac aagacatata gacatggaga gaagctaata atcacttgct 600
 atgaaggatt caagatccgg taccgccgac tacacaatat ggtttcatta tgcgcgatg 660
 atggaacgtg gaataatctg cccatctgtc aaggctgcct gagacctcta gcctcttcta 720
 atgctgctt tcccggattt aaacttgatg ggtctgcgta tcttgagtgc ttacaaaacc 840
 ttatctggtc gtccagccca ccccggtgcc ttgctctgga agcccaagtc tgtccactac 900
 ctccaatggt gagtacagga gatttcgtct gccacccgag gccttgtagc cgctacaacc 960
 acggaactgt ggtggagttt tactgcgac ctggctacag cctcaccagc gactacaagt 1020
 acatcacctg ccagtatgga gagtggtttc cttcttatca agtctactgc atcaaatac 1080
 agcaaactg gccagcacc catgagaccc tcttgaccac gtggaagatt gtggcggttca 1140


```

cggcaaccag tgtgctgctg gtgctgctgc tcgtcatcct ggccaggatg ttccagacca 1200
agttcaaggc ccactttccc cccagggggc ctccccggag ttccagcagt gaccctgact 1260
ttgtggtggt agacggcggtg cccgtcatgc tcccgtccta tgacgaagct gtgagtggcg 1320
gcttgagtgc cttaggcccc gggtagatgg cctctgtggg ccagggctgc cccttaccgg 1380
tggaacgacca gagcccccca gcataccccg gctcagggga cacggacaca ggcccagggg 1440
agtcagaaac ctgtgacagc gtctcaggct cttctgagct gctccaaagt ctgtattcac 1500
ctcccagggtg ccaagagagc acccaccctg cttcggacaa ccctgacata attgccagca 1560
cggcagagga ggtggcatcc accagcccag gcattccatca tgcccactgg gtgtgtgtcc 1620
taagaaactg attgattaa aaatttccca aagtgtcctg aagtgtctct tcaaatacat 1680
gttgatctgt ggagttgatt cctttccttc tcttggtttt agacaaatgt aaacaaagct 1740
ctgataccta aaattgctat gctgatagag tggtaggggc tggaagcttg atcaagtcct 1800
gtttcttctt gacacagact gattaaatat taaaagnaaa aaa 1843

```

<210> 132

<211> 490

<212> PRT

<213> Homo sapiens

<400> 132

```

Met Tyr His Gly Met Asn Pro Ser Asn Gly Asp Gly Phe Leu Glu Gln
  1             5             10             15

```

```

Gln Gln Gln Gln Gln Gln Pro Gln Ser Pro Gln Arg Leu Leu Ala Val
      20             25             30

```

```

Ile Leu Trp Phe Gln Leu Ala Leu Cys Phe Gly Pro Ala Gln Leu Thr
    35             40             45

```

```

Gly Gly Phe Asp Asp Leu Gln Val Cys Ala Asp Pro Gly Ile Pro Glu
    50             55             60

```

```

Asn Gly Phe Arg Thr Pro Ser Gly Gly Val Phe Phe Glu Gly Ser Val
    65             70             75             80

```

```

Ala Arg Phe His Cys Gln Asp Gly Phe Lys Leu Lys Gly Ala Thr Lys
      85             90             95

```

```

Arg Leu Cys Leu Lys His Phe Asn Gly Thr Leu Gly Trp Ile Pro Ser
    100            105            110

```

```

Asp Asn Ser Ile Cys Val Gln Glu Asp Cys Arg Ile Pro Gln Ile Glu
    115            120            125

```

```

Asp Ala Glu Ile His Asn Lys Thr Tyr Arg His Gly Glu Lys Leu Ile
    130            135            140

```

```

Ile Thr Cys His Glu Gly Phe Lys Ile Arg Tyr Pro Asp Leu His Asn
    145            150            155            160

```

```

Met Val Ser Leu Cys Arg Asp Asp Gly Thr Trp Asn Asn Leu Pro Ile
    165            170            175

```

```

Cys Gln Gly Cys Leu Arg Pro Leu Ala Ser Ser Asn Gly Tyr Val Asn

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 180 | | | | 185 | | | | 190 | | | | |
| Ile | Ser | Glu | Leu | Gln | Thr | Ser | Phe | Pro | Val | Gly | Thr | Val | Ile | Ser | Tyr |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Arg | Cys | Phe | Pro | Gly | Phe | Lys | Leu | Asp | Gly | Ser | Ala | Tyr | Leu | Glu | Cys |
| | | 210 | | | | | 215 | | | | | 220 | | | |
| Leu | Gln | Asn | Leu | Ile | Trp | Ser | Ser | Ser | Pro | Pro | Arg | Cys | Leu | Ala | Leu |
| 225 | | | | | 230 | | | | | 235 | | | | | |
| Glu | Ala | Gln | Val | Cys | Pro | Leu | Pro | Pro | Met | Val | Ser | His | Gly | Asp | Phe |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Cys | His | Pro | Arg | Pro | Cys | Glu | Arg | Tyr | Asn | His | Gly | Thr | Val | Val |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Phe | Tyr | Cys | Asp | Pro | Gly | Tyr | Ser | Leu | Thr | Ser | Asp | Tyr | Lys | Tyr |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Ile | Thr | Cys | Gln | Tyr | Gly | Glu | Trp | Phe | Pro | Ser | Tyr | Gln | Val | Tyr | Cys |
| | | 290 | | | | | 295 | | | | | 300 | | | |
| Ile | Lys | Ser | Glu | Gln | Thr | Trp | Pro | Ser | Thr | His | Glu | Thr | Leu | Leu | Thr |
| 305 | | | | | 310 | | | | | 315 | | | | | |
| Thr | Trp | Lys | Ile | Val | Ala | Phe | Thr | Ala | Thr | Ser | Val | Leu | Leu | Val | Leu |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Leu | Leu | Val | Ile | Leu | Ala | Arg | Met | Phe | Gln | Thr | Lys | Phe | Lys | Ala | His |
| | | | | 340 | | | | | 345 | | | | | 350 | |
| Phe | Pro | Pro | Arg | Gly | Pro | Pro | Arg | Ser | Ser | Ser | Ser | Asp | Pro | Asp | Phe |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Val | Val | Val | Asp | Gly | Val | Pro | Val | Met | Leu | Pro | Ser | Tyr | Asp | Glu | Ala |
| | | 370 | | | | | 375 | | | | | 380 | | | |
| Val | Ser | Gly | Gly | Leu | Ser | Ala | Leu | Gly | Pro | Gly | Tyr | Met | Ala | Ser | Val |
| 385 | | | | | 390 | | | | | 395 | | | | | |
| Gly | Gln | Gly | Cys | Pro | Leu | Pro | Val | Asp | Asp | Gln | Ser | Pro | Pro | Ala | Tyr |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Pro | Gly | Ser | Gly | Asp | Thr | Asp | Thr | Gly | Pro | Gly | Glu | Ser | Glu | Thr | Cys |
| | | | | 420 | | | | | 425 | | | | | 430 | |
| Asp | Ser | Val | Ser | Gly | Ser | Ser | Glu | Leu | Leu | Gln | Ser | Leu | Tyr | Ser | Pro |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Pro | Arg | Cys | Gln | Glu | Ser | Thr | His | Pro | Ala | Ser | Asp | Asn | Pro | Asp | Ile |
| | | 450 | | | | | 455 | | | | | 460 | | | |

Ile Ala Ser Thr Ala Glu Glu Val Ala Ser Thr Ser Pro Gly Ile His
 465 470 475 480

His Ala His Trp Val Leu Phe Leu Arg Asn
 485 490

<210> 133
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 133
 atctcctatc gctgctttcc cgg 23

<210> 134
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 134
 agccaggatc gcagtaaaac tcc 23

<210> 135
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 135
 atttaaactt gatgggtctg cgtatcttga gtgcttaca aaccttatct 50

<210> 136
 <211> 1815
 <212> DNA
 <213> Homo sapiens

<400> 136
 cccacgcgtc cgctccgcgc cctccccccc gctcccgtg cggtcgcgtc gtggcctaga 60
 gatgctgctg ccgcgggtgc agttgtcgcg cacgcctctg cccgccagcc cgctccaccg 120
 ccgtagegcc cgagtgtcgg ggggcgcacc cgagtcggggc catgaggccg ggaaccgcgc 180
 tacaggccgt gctgctggcc gtgctgctgg tggggctgcg ggccgcgacg ggtcgctgc 240
 tgagtgcctc ggatttgac ctacagaggag ggcagccagt ctgccgggga gggacacaga 300

```

ggccttggtta taaagtcatt tacttccatg atacttctcg aagactgaac tttgaggaag 360
ccaaagaagc ctgcaggagg gatggaggcc agctagtcag catcgagtct gaagatgaac 420
agaaactgat agaaaagttc attgaaaacc tcttgccatc tgatgggtgac ttctggattg 480
ggctcaggag gcgtgaggag aaacaaagca atagcacagc ctgccaggac ctttatgctt 540
ggactgatgg cagcatatca caatttagga actggtatgt ggatgagccg tcctgcggca 600
gcgagggtctg cgtgggtcatg taccatcagc catcggcacc cgctggcatc ggaggccct 660
acatgttcca gtggaatgat gaccggtgca acatgaagaa caatttcatt tgcaaattatt 720
ctgatgagaa accagcagtt ctttctagag aagctgaagg tgaggaaaca gagctgacaa 780
cacctgtact tccagaagaa acacaggaag aagatgccaa aaaaacattt aaagaaagta 840
gagaagctgc cttgaatctg gcctacatcc taatccccag cattcccctt ctccctctcc 900
ttgtgggtcac cacagttgta tgttgggttt ggatctgtag aaaaagaaaa cgggagcagc 960
cagaccctag cacaaagaag caacacacca tctggccctc tcctcaccag ggaaacagcc 1020
cggacctaga ggtctacaat gtcataagaa aacaaagcga agctgactta gctgagaccc 1080
ggccagacct gaagaatatt tcattccgag tgtgttcggg agaagccact cccgatgaca 1140
tgtcttgtga ctatgacaac atggctgtga acccatcaga aagtgggttt gtgactctgg 1200
tgagcgtgga gagtggattt gtgaccaatg acatttatga gttctcccca gaccaaattg 1260
ggaggagtaa ggagtctgga tgggtggaaa atgaaatata tggttattag gacatataaa 1320
aaactgaaac tgacaacaat ggaaaagaaa tgataagcaa aatcctctta ttttctataa 1380
ggaaaataca cagaaggtct atgaacaagc ttagatcagg tcctgtggat gagcatgtg 1440
tccccacgac ctctgttgg acccccacgt tttggctgta tcctttatcc cagccagtca 1500
tccagctcga ccttatgaga aggtaccttg cccaggctctg gcacatagta gagtctcaat 1560
aaatgtcact tggttggttg tatctaactt ttaagggaca gagctttacc tggcagtgat 1620
aaagatgggc tgtggagctt ggaaaaccac ctctgttttc cttgctctat acagcagcac 1680
atattatcat acagacagaa aatccagaat cttttcaaag cccacatatg gtagcacagg 1740
ttggcctgtg catcggaat tctcatatct gtttttttca aagaataaaa tcaaataaag 1800
agcaggaaaa aaaaa 1815

```

<210> 137

<211> 382

<212> PRT

<213> Homo sapiens

<400> 137

Met Arg Pro Gly Thr Ala Leu Gln Ala Val Leu Leu Ala Val Leu Leu
1 5 10 15

Val Gly Leu Arg Ala Ala Thr Gly Arg Leu Leu Ser Ala Ser Asp Leu
20 25 30

Asp Leu Arg Gly Gly Gln Pro Val Cys Arg Gly Gly Thr Gln Arg Pro
35 40 45

Cys Tyr Lys Val Ile Tyr Phe His Asp Thr Ser Arg Arg Leu Asn Phe
50 55 60

Glu Glu Ala Lys Glu Ala Cys Arg Arg Asp Gly Gly Gln Leu Val Ser
65 70 75 80

Ile Glu Ser Glu Asp Glu Gln Lys Leu Ile Glu Lys Phe Ile Glu Asn
85 90 95

Leu Leu Pro Ser Asp Gly Asp Phe Trp Ile Gly Leu Arg Arg Arg Glu
100 105 110

Glu Lys Gln Ser Asn Ser Thr Ala Cys Gln Asp Leu Tyr Ala Trp Thr
 115 120 125
 Asp Gly Ser Ile Ser Gln Phe Arg Asn Trp Tyr Val Asp Glu Pro Ser
 130 135 140
 Cys Gly Ser Glu Val Cys Val Val Met Tyr His Gln Pro Ser Ala Pro
 145 150 155 160
 Ala Gly Ile Gly Gly Pro Tyr Met Phe Gln Trp Asn Asp Asp Arg Cys
 165 170 175
 Asn Met Lys Asn Asn Phe Ile Cys Lys Tyr Ser Asp Glu Lys Pro Ala
 180 185 190
 Val Pro Ser Arg Glu Ala Glu Gly Glu Glu Thr Glu Leu Thr Thr Pro
 195 200 205
 Val Leu Pro Glu Glu Thr Gln Glu Glu Asp Ala Lys Lys Thr Phe Lys
 210 215 220
 Glu Ser Arg Glu Ala Ala Leu Asn Leu Ala Tyr Ile Leu Ile Pro Ser
 225 230 235 240
 Ile Pro Leu Leu Leu Leu Leu Val Val Thr Thr Val Val Cys Trp Val
 245 250 255
 Trp Ile Cys Arg Lys Arg Lys Arg Glu Gln Pro Asp Pro Ser Thr Lys
 260 265 270
 Lys Gln His Thr Ile Trp Pro Ser Pro His Gln Gly Asn Ser Pro Asp
 275 280 285
 Leu Glu Val Tyr Asn Val Ile Arg Lys Gln Ser Glu Ala Asp Leu Ala
 290 295 300
 Glu Thr Arg Pro Asp Leu Lys Asn Ile Ser Phe Arg Val Cys Ser Gly
 305 310 315 320
 Glu Ala Thr Pro Asp Asp Met Ser Cys Asp Tyr Asp Asn Met Ala Val
 325 330 335
 Asn Pro Ser Glu Ser Gly Phe Val Thr Leu Val Ser Val Glu Ser Gly
 340 345 350
 Phe Val Thr Asn Asp Ile Tyr Glu Phe Ser Pro Asp Gln Met Gly Arg
 355 360 365
 Ser Lys Glu Ser Gly Trp Val Glu Asn Glu Ile Tyr Gly Tyr
 370 375 380

<210> 138

<211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 138
 gttcattgaa aacctcttgc catctgatgg tgacttctgg attgggctca 50

<210> 139
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 139
 aagccaaaga agcctgcagg aggg 24

<210> 140
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 140
 cagtccaagc ataaaggtcc tggc 24

<210> 141
 <211> 1514
 <212> DNA
 <213> Homo sapiens

<400> 141
 ggggtctccc tcagggccgg gaggcacagc ggtccctgct tgctgaaggg ctggatgtac 60
 gcatccgcag gttcccgagg acttgggggc gcccgctgag ccccggcgcc cgcagaagac 120
 ttgtgttttg ctcttcgagc ctcaaccggg agggcagcga gggcctacca ccatgatcac 180
 tgggtgtgttc agcatgcgct tgtggacccc agtgggcgtc ctgacctcgc tggcgtactg 240
 cctgcaccag cggcgggtgg ccttgccga gctgcaggag gccgatggcc agtgtccggt 300
 cgacctcagc ctgctgaagt tgaaaatggt gcaggtcgtg ttctgacacg gggctcggag 360
 tcctctcaag ccgctcccgc tggaggagca ggtagagtgg aacccccagc tattagaggt 420
 cccaccccaa actcagtttg attacacagt caccaatcta gctgggtggc cgaaaccata 480
 ttctccttac gactctcaat accatgagac caccctgaag gggggcatgt ttgctgggca 540
 gctgaccaag gtgggcatgc agcaaagtgt tgccttgga gagagactga ggaagaacta 600
 tgtggaagac attccctttc ttccaccaac cttcaacca caggaggtct ttattcgttc 660
 cactaacatt ttccggaatc tggagtccac ccgttggttg ctggctgggc tttccagtg 720

Leu Ala Gly Leu Phe Gln Cys Gln Lys Glu Gly Pro Ile Ile Ile His
 180 185 190
 Thr Asp Glu Ala Asp Ser Glu Val Leu Tyr Pro Asn Tyr Gln Ser Cys
 195 200 205
 Trp Ser Leu Arg Gln Arg Thr Arg Gly Arg Arg Gln Thr Ala Ser Leu
 210 215 220
 Gln Pro Gly Ile Ser Glu Asp Leu Lys Lys Val Lys Asp Arg Met Gly
 225 230 235 240
 Ile Asp Ser Ser Asp Lys Val Asp Phe Phe Ile Leu Leu Asp Asn Val
 245 250 255
 Ala Ala Glu Gln Ala His Asn Leu Pro Ser Cys Pro Met Leu Lys Arg
 260 265 270
 Phe Ala Arg Met Ile Glu Gln Arg Ala Val Asp Thr Ser Leu Tyr Ile
 275 280 285
 Leu Pro Lys Glu Asp Arg Glu Ser Leu Gln Met Ala Val Gly Pro Phe
 290 295 300
 Leu His Ile Leu Glu Ser Asn Leu Leu Lys Ala Met Asp Ser Ala Thr
 305 310 315 320
 Ala Pro Asp Lys Ile Arg Lys Leu Tyr Leu Tyr Ala Ala His Asp Val
 325 330 335
 Thr Phe Ile Pro Leu Leu Met Thr Leu Gly Ile Phe Asp His Lys Trp
 340 345 350
 Pro Pro Phe Ala Val Asp Leu Thr Met Glu Leu Tyr Gln His Leu Glu
 355 360 365
 Ser Lys Glu Trp Phe Val Gln Leu Tyr Tyr His Gly Lys Glu Gln Val
 370 375 380
 Pro Arg Gly Cys Pro Asp Gly Leu Cys Pro Leu Asp Met Phe Leu Asn
 385 390 395 400
 Ala Met Ser Val Tyr Thr Leu Ser Pro Glu Lys Tyr His Ala Leu Cys
 405 410 415
 Ser Gln Thr Gln Val Met Glu Val Gly Asn Glu Glu
 420 425

<210> 143

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 143

ccaactacca aagctgctgg agcc

24

<210> 144

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 144

gcagctctat taccacggga agga

24

<210> 145

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 145

tccttcccgt ggtaatagag ctgc

24

<210> 146

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 146

ggcagagaac cagaggccgg aggagactgc ctctttacag ccagg

45

<210> 147

<211> 1686

<212> DNA

<213> Homo sapiens

<400> 147

ctcctcttaa catacttgca gctaaaacta aatattgctg cttggggacc tccttctagc 60
cttaaatttc agctcatcac cttcacctgc cttgggtcatg gctctgctat tctccttgat 120
ccttgccatt tgcaccagac ctggattcct agcgtctcca tctggagtgc ggctggtggg 180

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.

```

gggcctccac cgctgtgaag ggcgggtgga ggtggaacag aaaggccagt ggggcaccgt 240
gtgtgatgac ggctgggaca ttaaggacgt ggctgtgttg tgccgggagc tgggctgtgg 300
agctgccagc ggaaccccta gtggtathtt gtatgagcca ccagcagaaa aagagcaaaa 360
ggtcctcacc caatcagtcg gttgcacagg aacagaagat acattggctc agtgtgagca 420
agaagaagtt tatgattgtt cacatgatga agatgctggg gcacgtgttg agaaccacaga 480
gagctctttc tccccagtcg cagagggtgt caggctggct gacggccctg ggcattgcaa 540
gggacgcgtg gaagtgaagc accagaacca gtggtatacc gtgtgccaga caggctggag 600
cctccggggc gcaaagggtg tgtgccggca gctgggatgt gggagggtg tactgactca 660
aaaacgctgc aacaagcatg cctatggccg aaaacccatc tggctgagcc agatgtcatg 720
ctcaggacga gaagcaaccc ttcaggattg cccttctggg ccttggggga agaacacctg 780
caaccatgat gaagacacgt gggtcgaatg tgaagatccc tttgacttga gactagtagg 840
aggagacaac ctctgctctg ggcgactgga ggtgctgcac aagggcgat ggggctctgt 900
ctgtgatgac aactggggag aaaaggagga ccagggtgta tgcaagcaac tgggctgtgg 960
gaagtccctc tctccctcct tcagagaccg gaaatgctat ggccctgggg ttggccgcac 1020
ctggctggat aatgttcgtt gctcagggga ggagcagtc ctggagcagt gccagcacag 1080
attttggggg tttcacgact gcacccacca ggaagatgtg gctgtcatct gctcagtgtg 1140
ggtgggcacg atctaactct ttgagtgcct gaatagaaga aaaacacaga agaagggagc 1200
atttactgtc tacatgactg catgggatga acactgatct tcttctgccc ttggactggg 1260
acttatactt ggtgcccctg attctcaggc cttcagagtt ggatcagaac ttacaacatc 1320
aggtctagtt ctcaggccat cagacatagt ttggaactac atcaccacct ttctatgtc 1380
tccacattgc acacagcaga tcccagcct ccataattgt gtgtatcaac tacttaaata 1440
cattctcaca cacacacaca cacacacaca cacacacaca cacacataca ccatttgtcc 1500
tgtttctctg aagaactctg acaaaatata gattttggta ctgaaagaga ttctagagga 1560
acggaatttt aaggataaat tttctgaatt gggttatggg tttctgaaat tggctctata 1620
atctaattag atataaaatt ctggtaactt tatttacaat aataaagata gcactatgtg 1680
ttcaaa 1686

```

<210> 148

<211> 347

<212> PRT

<213> Homo sapiens

<400> 148

Met Ala Leu Leu Phe Ser Leu Ile Leu Ala Ile Cys Thr Arg Pro Gly
1 5 10 15

Phe Leu Ala Ser Pro Ser Gly Val Arg Leu Val Gly Gly Leu His Arg
20 25 30

Cys Glu Gly Arg Val Glu Val Glu Gln Lys Gly Gln Trp Gly Thr Val
35 40 45

Cys Asp Asp Gly Trp Asp Ile Lys Asp Val Ala Val Leu Cys Arg Glu
50 55 60

Leu Gly Cys Gly Ala Ala Ser Gly Thr Pro Ser Gly Ile Leu Tyr Glu
65 70 75 80

Pro Pro Ala Glu Lys Glu Gln Lys Val Leu Ile Gln Ser Val Ser Cys
85 90 95

Thr Gly Thr Glu Asp Thr Leu Ala Gln Cys Glu Gln Glu Glu Val Tyr
100 105 110

```

Asp Cys Ser His Asp Glu Asp Ala Gly Ala Ser Cys Glu Asn Pro Glu
    115                      120                      125

Ser Ser Phe Ser Pro Val Pro Glu Gly Val Arg Leu Ala Asp Gly Pro
    130                      135                      140

Gly His Cys Lys Gly Arg Val Glu Val Lys His Gln Asn Gln Trp Tyr
    145                      150                      155                      160

Thr Val Cys Gln Thr Gly Trp Ser Leu Arg Ala Ala Lys Val Val Cys
    165                      170                      175

Arg Gln Leu Gly Cys Gly Arg Ala Val Leu Thr Gln Lys Arg Cys Asn
    180                      185                      190

Lys His Ala Tyr Gly Arg Lys Pro Ile Trp Leu Ser Gln Met Ser Cys
    195                      200                      205

Ser Gly Arg Glu Ala Thr Leu Gln Asp Cys Pro Ser Gly Pro Trp Gly
    210                      215                      220

Lys Asn Thr Cys Asn His Asp Glu Asp Thr Trp Val Glu Cys Glu Asp
    225                      230                      235                      240

Pro Phe Asp Leu Arg Leu Val Gly Gly Asp Asn Leu Cys Ser Gly Arg
    245                      250                      255

Leu Glu Val Leu His Lys Gly Val Trp Gly Ser Val Cys Asp Asp Asn
    260                      265                      270

Trp Gly Glu Lys Glu Asp Gln Val Val Cys Lys Gln Leu Gly Cys Gly
    275                      280                      285

Lys Ser Leu Ser Pro Ser Phe Arg Asp Arg Lys Cys Tyr Gly Pro Gly
    290                      295                      300

Val Gly Arg Ile Trp Leu Asp Asn Val Arg Cys Ser Gly Glu Glu Gln
    305                      310                      315                      320

Ser Leu Glu Gln Cys Gln His Arg Phe Trp Gly Phe His Asp Cys Thr
    325                      330                      335

His Gln Glu Asp Val Ala Val Ile Cys Ser Val
    340                      345

```

<210> 149

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

oligonucleotide probe

<400> 149

ttcagctcat caccttcacc tgcc

24

<210> 150

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 150

ggctcataca aaataccact aggg

24

<210> 151

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 151

gggacctccac cgctgtgaag ggcgggtgga ggtggaacag aaaggccagt

50

<210> 152

<211> 1427

<212> DNA

<213> Homo sapiens

<400> 152

```

actgcactcg gttctatcga ttgaattccc cggggatcct ctagagatcc ctcgacctcg 60
acccacgcgt ccgcggacgc gtgggcggac gcgtgggccc gctaccagga agagtctgcc 120
gaagggtgaag gccatggact tcatcacctc cacagccatc ctgcccctgc tgttcggctg 180
cctgggcgtc ttcggcctct tccggctgct gcagtgggtg cgcgggaagg cctacctgcg 240
gaatgctgtg gtggtgatca caggcgccac ctccaggctg ggcaaagaat gtgcaaaagt 300
cttctatgct gcgggtgcta aactggtgct ctgtggcccg aatggtgggg ccctagaaga 360
gctcatcaga gaacttaccg cttctcatgc caccaagggt cagacacaca agccttactt 420
ggtgaccttc gacctcacag actctggggc catagtgtga gcagcagctg agatcctgca 480
gtgctttggc tatgtcgaca tacttgtcaa caatgctggg atcagctacc gtggtaccat 540
catggacacc acagtggatg tggacaagag ggtcatggag acaaactact ttggcccagt 600
tgctctaacg aaagcactcc tgccctccat gatcaagagg aggcaaggcc acattgtcgc 660
catcagcagc atccagggca agatgagcat tccttttcga tcagcatatg cagcctccaa 720
gcacgcaacc caggctttct ttgactgtct gcgtgccgag atggaacagt atgaaattga 780
ggtgaccgtc atcagccccg gctacatcca caccaacctc tctgtaaatt ccatcaccgc 840
ggatggatct aggtatggag ttatggacac caccacagcc cagggccgaa gccctgtgga 900
ggtggcccag gatgttcttg ctgctgtggg gaagaagaag aaagatgtga tcctggctga 960
cttactgcct tccttggctg tttatcttcg aactctggct cctgggctct tcttcagcct 1020
catggcctcc agggccagaa aagagcggaa atccaagaac tcctagtact ctgaccagcc 1080

```

```

agggccaggg cagagaagca gcactcttag gcttgcttac tctacaaggg acagttgcat 1140
ttgttgagac tttaatggag atttgtctca caagtgggaa agactgaaga aacacatctc 1200
gtgcagatct gctggcagag gacaatcaaa aacgacaaca agcttcttcc cagggtgagg 1260
ggaaacactt aaggaataaa tatggagctg gggtttaaca ctaaaaaacta gaaataaaca 1320
tctcaaacag taaaaaaaaa aaaaaagggc ggccgcgact ctagagtcga cctgcagaag 1380
cttggccgcc atggcccaac ttgtttattg cagcttataa tggttac 1427

```

<210> 153

<211> 310

<212> PRT

<213> Homo sapiens

<400> 153

```

Met Asp Phe Ile Thr Ser Thr Ala Ile Leu Pro Leu Leu Phe Gly Cys
  1             5             10             15

```

```

Leu Gly Val Phe Gly Leu Phe Arg Leu Leu Gln Trp Val Arg Gly Lys
      20             25             30

```

```

Ala Tyr Leu Arg Asn Ala Val Val Val Ile Thr Gly Ala Thr Ser Gly
      35             40             45

```

```

Leu Gly Lys Glu Cys Ala Lys Val Phe Tyr Ala Ala Gly Ala Lys Leu
      50             55             60

```

```

Val Leu Cys Gly Arg Asn Gly Gly Ala Leu Glu Glu Leu Ile Arg Glu
      65             70             75             80

```

```

Leu Thr Ala Ser His Ala Thr Lys Val Gln Thr His Lys Pro Tyr Leu
      85             90             95

```

```

Val Thr Phe Asp Leu Thr Asp Ser Gly Ala Ile Val Ala Ala Ala Ala
      100            105            110

```

```

Glu Ile Leu Gln Cys Phe Gly Tyr Val Asp Ile Leu Val Asn Asn Ala
      115            120            125

```

```

Gly Ile Ser Tyr Arg Gly Thr Ile Met Asp Thr Thr Val Asp Val Asp
      130            135            140

```

```

Lys Arg Val Met Glu Thr Asn Tyr Phe Gly Pro Val Ala Leu Thr Lys
      145            150            155            160

```

```

Ala Leu Leu Pro Ser Met Ile Lys Arg Arg Gln Gly His Ile Val Ala
      165            170            175

```

```

Ile Ser Ser Ile Gln Gly Lys Met Ser Ile Pro Phe Arg Ser Ala Tyr
      180            185            190

```

```

Ala Ala Ser Lys His Ala Thr Gln Ala Phe Phe Asp Cys Leu Arg Ala
      195            200            205

```

```

Glu Met Glu Gln Tyr Glu Ile Glu Val Thr Val Ile Ser Pro Gly Tyr

```

1140 1200 1260 1320 1380 1427

| 210 | 215 | 220 | |
|--|-----|-----|-----|
| Ile His Thr Asn Leu Ser Val Asn Ala Ile Thr Ala Asp Gly Ser Arg | | | |
| 225 | 230 | 235 | 240 |
| Tyr Gly Val Met Asp Thr Thr Thr Ala Gln Gly Arg Ser Pro Val Glu | | | |
| | 245 | 250 | 255 |
| Val Ala Gln Asp Val Leu Ala Ala Val Gly Lys Lys Lys Lys Asp Val | | | |
| | 260 | 265 | 270 |
| Ile Leu Ala Asp Leu Leu Pro Ser Leu Ala Val Tyr Leu Arg Thr Leu | | | |
| | 275 | 280 | 285 |
| Ala Pro Gly Leu Phe Phe Ser Leu Met Ala Ser Arg Ala Arg Lys Glu | | | |
| | 290 | 295 | 300 |
| Arg Lys Ser Lys Asn Ser | | | |
| 305 | 310 | | |
| <210> 154 | | | |
| <211> 24 | | | |
| <212> DNA | | | |
| <213> Artificial Sequence | | | |
| <220> | | | |
| <223> Description of Artificial Sequence: Synthetic
oligonucleotide probe | | | |
| <400> 154 | | | |
| ggtgctaaac tggctgctctg tggc | | | 24 |
| <210> 155 | | | |
| <211> 20 | | | |
| <212> DNA | | | |
| <213> Artificial Sequence | | | |
| <220> | | | |
| <223> Description of Artificial Sequence: Synthetic
oligonucleotide probe | | | |
| <400> 155 | | | |
| cagggcaaga tgagcattcc | | | 20 |
| <210> 156 | | | |
| <211> 24 | | | |
| <212> DNA | | | |
| <213> Artificial Sequence | | | |
| <220> | | | |
| <223> Description of Artificial Sequence: Synthetic
oligonucleotide probe | | | |

<400> 156
tcatactgtt ccatactcggc acgc 24

<210> 157
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 157
aatgggtgggg ccctagaaga gctcatcaga gaactcaccg cttctcatgc 50

<210> 158
<211> 1771
<212> DNA
<213> Homo sapiens

<400> 158
cccacgcgtc cgctggtggt agatcgagca accctctaaa agcagtttag agtggtaaaa 60
aaaaaaaaaa acacacccaaa cgctcgcagc cacaaaaggg atgaaatttc ttctggacat 120
cctcctgctt ctcccgttac tgatcgtctg ctccctagag tccttcgtga agctttttat 180
tcctaagagg agaaaatcag tcaccggcga aatcgtgctg attacaggag ctgggcatgg 240
aattgggaga ctgactgcct atgaatttgc taaacttaaa agcaagctgg ttctctggga 300
tataaataag catggactgg aggaaacagc tgccaaatgc aagggaactgg gtgccaaggt 360
tcataccttt gtggtagact gcagcaaccg agaagatatt tacagctctg caaagaaggt 420
gaaggcagaa attggagatg ttagtatatt agtaaataat gctgggtgtag tctatacatc 480
agatttggtt gctacacaag atcctcagat tgaaaagact tttgaagtta atgtacttgc 540
acattttctg actacaaaagg catttcttcc tgcaatgacg aagaataacc atggccatat 600
tgtcactgtg gcttcggcag ctggacatgt ctcggtcccc ttcttactgg cttactgttc 660
aagcaagttt gctgctgttg gatttcataa aactttgaca gatgaactgg ctgccttaca 720
aataactgga gtcaaaacaa catgtctgtg tcctaatttc gtaaacactg gcttcatcaa 780
aaatccaagt acaagtttgg gacccactct ggaacctgag gaagtggtaa acaggctgat 840
gcatgggatt ctgactgagc agaagatgat ttttattcca tcttctatag cttttttaac 900
aacattggaa aggatccttc ctgagcgttt cctggcagtt ttaaaacgaa aaatcagtgt 960
taagtttgat gcagttattg gatataaaat gaaagcgcaa taagcaccta gttttctgaa 1020
aactgattta ccaggtttag gttgatgtca tctaatagtg ccagaatttt aatgtttgaa 1080
cttctgtttt ttctaattat cccattttct tcaatatcat ttttgaggct ttggcagtct 1140
tcatttacta ccacttgttc tttagccaaa agctgattac atatgatata aacagagaaa 1200
tacctttaga ggtgacttta aggaaaatga agaaaaagaa ccaaaatgac tttattaaaa 1260
taatttccaa gattatttgt ggctcacctg aaggctttgc aaaatttgta ccataaccgt 1320
ttatttaaca tatattttta tttttgattg cacttaaatt ttgtataatt tgtgtttctt 1380
tttctgttct acataaaatc agaaacttca agctctctaa ataaaatgaa ggactatatc 1440
tagtggatatt tcacaatgaa tatcatgaac tctcaatggg taggtttcat cctaccatt 1500
gccactctgt ttcctgagag atacctcaca ttccaatgcc aaacatttct gcacagggaa 1560
gctagaggtg gatacacgtg ttgcaagtat aaaagcatca ctgggattta aggagaattg 1620
agagaatgta ccacaaaatg gcagcaataa taaatggatc acacttaaaa aaaaaaaaaa 1680
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1740
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a a 1771

<210> 159

<212> PRT

<400> 159

Cys Ser Leu Glu Ser Phe Val Lys Leu Phe Ile Pro Lys Arg Arg Lys
20 25 30

Ser Val Thr Gly Glu Ile Val Leu Ile Thr Gly Ala Gly His Gly Ile
35 40 45

Gly Arg Leu Thr Ala Tyr Glu Phe Ala Lys Leu Lys Ser Lys Leu Val
50 55 60

Leu Trp Asp Ile Asn Lys His Gly Leu Glu Glu Thr Ala Ala Lys Cys
65 70 75 80

Lys Gly Leu Gly Ala Lys Val His Thr Phe Val Val Asp Cys Ser Asn
85 90 95

Arg Glu Asp Ile Tyr Ser Ser Ala Lys Lys Val Lys Ala Glu Ile Gly
100 105 110

Asp Val Ser Ile Leu Val Asn Asn Ala Gly Val Val Tyr Thr Ser Asp
115 120 125

Leu Phe Ala Thr Gln Asp Pro Gln Ile Glu Lys Thr Phe Glu Val Asn
130 135 140

Val Leu Ala His Phe Trp Thr Thr Lys Ala Phe Leu Pro Ala Met Thr
145 150 155 160

Lys Asn Asn His Gly His Ile Val Thr Val Ala Ser Ala Ala Gly His
165 170 175

Val Ser Val Pro Phe Leu Leu Ala Tyr Cys Ser Ser Lys Phe Ala Ala
180 185 190

Val Gly Phe His Lys Thr Leu Thr Asp Glu Leu Ala Ala Leu Gln Ile
195 200 205

Thr Gly Val Lys Thr Thr Cys Leu Cys Pro Asn Phe Val Asn Thr Gly
210 215 220

Phe Ile Lys Asn Pro Ser Thr Ser Leu Gly Pro Thr Leu Glu Pro Glu
225 230 235 240

Glu Val Val Asn Arg Leu Met His Gly Ile Leu Thr Glu Gln Lys Met
245 250 255

cccacgcgtc cgcggacgcg tgggtcgact agttctagat cgcgagcggc cgcgcgcggc 60
tcagggagga qcaccgactg cgcgcacccc tgagagatgg ttggtgccat gtggaagggtg 120

attgtttcgc tggctcctggt gatgcctggc ccctgtgatg ggctgtttcg ctccctatac 180
 agaagtgttt ccatgccacc taagggagac tcaggacagc cattatttct cacccttac 240
 attgaagctg ggaagatcca aaaaggaaga gaattgagtt tggtcggccc tttcccagga 300
 ctgaacatga agagttatgc cggcttcctc accgtgaata agacttaca cagcaacctc 360
 ttcttctggt tcttcccagc tcagatacag ccagaagatg cccagtagt tctctggcta 420
 caggggtgggc cgggaggttc atccatgttt ggactctttg tggaacatgg gccttatgtt 480
 gtcacaagta acatgacctt gcgtgacaga gacttcccct ggaccacaac gctctccatg 540
 ctttacattg acaatccagt gggcacaggc ttcagtttta ctgatgatac ccacggatat 600
 gcagtcaatg aggacgatgt agcacgggat ttatacagt cactaattca gtttttccag 660
 atatttcctg aatataaaaa taatgacttt tatgtcactg gggagtctta tgcagggaaa 720
 tatgtgccag ccattgcaca cctcatccat tccctcaacc ctgtgagaga ggtgaagatc 780
 aacctgaacg gaattgctat tggagatgga tattctgatc ccgaatcaat tatagggggc 840
 tatgcagaat tctgtacca aattggcctt tgggatgaga agcaaaaaaa gtacttccag 900
 aagcagtgcc atgaatgcat agaacacatc aggaagcaga actggtttga ggctttgaa 960
 atactggata aactactaga tggcgactta acaagtgatc cttcttactt ccagaatgtt 1020
 acaggatgta gtaattacta taactttttg cgggtgcacgg aacctgagga tcagctttac 1080
 tatgtgaaat tttgtcact cccagaggtg agacaagcca tccacgtggg gaatcagact 1140
 tttaatgatg gaactatagt tgaaaagtac ttgcgagaag atacagtaca gtcagttaag 1200
 ccatgggttaa ctgaaatcat gaataattat aaggttctga tctacaatgg ccaactggac 1260
 atcatcgtgg cagctgccct gacagagcgc tccttgatgg gcatggactg gaaaggatcc 1320
 caggaataca agaaggcaga aaaaaaagtt tggaagatct ttaaactctga cagtgaagtg 1380
 gctggttaca tccggcaagc ggggtgacttc catcaggtaa ttattcgagg tggaggacat 1440
 attttaccct atgaccagcc tctgagagct tttgacatga ttaatcgatt catttatgga 1500
 aaaggatggg atccttatgt tggataaact accttcccaa aagagaacat cagaggtttt 1560
 cattgctgaa aagaaaatcg taaaaacaga aaatgtcata ggaataaaaa aattatcttt 1620
 tcatatctgc aagatttttt tcatcaataa aaattatcct tgaaacaagt gagcttttgt 1680
 ttttgggggg agatgtttac tacaaaatta acatgagtac atgagtaaga attacattat 1740
 ttaacttaaa ggatgaaagg tatggatgat gtgacactga gacaagatgt ataaatgaaa 1800
 ttttagggtc ttgaatagga agtttttaatt tcttctaaga gtaagtgaaa agtgcagttg 1860
 taacaaacaa agctgtaaca tctttttctg ccaataacag aagtttggca tgccgtgaag 1920
 gtgtttggaa atattatttg ataagaatag ctcaattatc ccaaataaat ggatgaagct 1980
 ataatagttt tggggaaaag attctcaat gtataaagtc ttagaacaaa agaattcttt 2040
 gaaataaaaa tattatatat aaaagtaaaa aaaaaa 2076

<210> 164

<211> 476

<212> PRT

<213> Homo sapiens

<400> 164

Met Val Gly Ala Met Trp Lys Val Ile Val Ser Leu Val Leu Leu Met
 1 5 10 15

Pro Gly Pro Cys Asp Gly Leu Phe Arg Ser Leu Tyr Arg Ser Val Ser
 20 25 30

Met Pro Pro Lys Gly Asp Ser Gly Gln Pro Leu Phe Leu Thr Pro Tyr
 35 40 45

Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu Val Gly
 50 55 60

Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu Thr Val

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | | | | 70 | | | | | | 75 | | | | 80 |
| Asn | Lys | Thr | Tyr | Asn | Ser | Asn | Leu | Phe | Phe | Trp | Phe | Phe | Pro | Ala | Gln |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ile | Gln | Pro | Glu | Asp | Ala | Pro | Val | Val | Leu | Trp | Leu | Gln | Gly | Gly | Pro |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Gly | Gly | Ser | Ser | Met | Phe | Gly | Leu | Phe | Val | Glu | His | Gly | Pro | Tyr | Val |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Thr | Ser | Asn | Met | Thr | Leu | Arg | Asp | Arg | Asp | Phe | Pro | Trp | Thr | Thr |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Thr | Leu | Ser | Met | Leu | Tyr | Ile | Asp | Asn | Pro | Val | Gly | Thr | Gly | Phe | Ser |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Phe | Thr | Asp | Asp | Thr | His | Gly | Tyr | Ala | Val | Asn | Glu | Asp | Asp | Val | Ala |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Arg | Asp | Leu | Tyr | Ser | Ala | Leu | Ile | Gln | Phe | Phe | Gln | Ile | Phe | Pro | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Tyr | Lys | Asn | Asn | Asp | Phe | Tyr | Val | Thr | Gly | Glu | Ser | Tyr | Ala | Gly | Lys |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Tyr | Val | Pro | Ala | Ile | Ala | His | Leu | Ile | His | Ser | Leu | Asn | Pro | Val | Arg |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Glu | Val | Lys | Ile | Asn | Leu | Asn | Gly | Ile | Ala | Ile | Gly | Asp | Gly | Tyr | Ser |
| 225 | | | | 230 | | | | | | 235 | | | | | 240 |
| Asp | Pro | Glu | Ser | Ile | Ile | Gly | Gly | Tyr | Ala | Glu | Phe | Leu | Tyr | Gln | Ile |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Leu | Leu | Asp | Glu | Lys | Gln | Lys | Lys | Tyr | Phe | Gln | Lys | Gln | Cys | His |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Cys | Ile | Glu | His | Ile | Arg | Lys | Gln | Asn | Trp | Phe | Glu | Ala | Phe | Glu |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Ile | Leu | Asp | Lys | Leu | Leu | Asp | Gly | Asp | Leu | Thr | Ser | Asp | Pro | Ser | Tyr |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Phe | Gln | Asn | Val | Thr | Gly | Cys | Ser | Asn | Tyr | Tyr | Asn | Phe | Leu | Arg | Cys |
| 305 | | | | 310 | | | | | | 315 | | | | | 320 |
| Thr | Glu | Pro | Glu | Asp | Gln | Leu | Tyr | Tyr | Val | Lys | Phe | Leu | Ser | Leu | Pro |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Glu | Val | Arg | Gln | Ala | Ile | His | Val | Gly | Asn | Gln | Thr | Phe | Asn | Asp | Gly |
| | | | 340 | | | | | 345 | | | | | 350 | | |

Thr Ile Val Glu Lys Tyr Leu Arg Glu Asp Thr Val Gln Ser Val Lys
 355 360 365

Pro Trp Leu Thr Glu Ile Met Asn Asn Tyr Lys Val Leu Ile Tyr Asn
 370 375 380

Gly Gln Leu Asp Ile Ile Val Ala Ala Ala Leu Thr Glu Arg Ser Leu
 385 390 395 400

Met Gly Met Asp Trp Lys Gly Ser Gln Glu Tyr Lys Lys Ala Glu Lys
 405 410 415

Lys Val Trp Lys Ile Phe Lys Ser Asp Ser Glu Val Ala Gly Tyr Ile
 420 425 430

Arg Gln Ala Gly Asp Phe His Gln Val Ile Ile Arg Gly Gly Gly His
 435 440 445

Ile Leu Pro Tyr Asp Gln Pro Leu Arg Ala Phe Asp Met Ile Asn Arg
 450 455 460

Phe Ile Tyr Gly Lys Gly Trp Asp Pro Tyr Val Gly
 465 470 475

<210> 165

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 165

ttccatgccca cctaagggag actc

24

<210> 166

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 166

tggatgaggt gtgcaatggc tggc

24

<210> 167

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 167

agctctcaga ggctggatcat aggg

24

<210> 168

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 168

gtcggccctt tcccaggact gaacatgaag agttatgccg gcttcctcac

50

<210> 169

<211> 2477

<212> DNA

<213> Homo sapiens

<400> 169

cgagggtctt tccggctccg gaatggcaca tgtgggaatc ccagtcttgt tggtacacac 60
 atttttccct ttccatacaa gttctaacag ctgttctaac agctagtgat caggggttct 120
 tcttgctgga gaagaaaggg ctgagggcag agcagggcac tctcactcag ggtgaccagc 180
 tccttgccctc tctgtggata acagagcatg agaaagtga gagatgcagc ggagtggagt 240
 gatggaagtc taaaatagga aggaattttg tgtgcaatat cagactctgg gagcagttga 300
 cctggagagc ctgggggagg gctgcctaa caagctttca aaaaacagga gcgacttcca 360
 ctgggctggg ataagacgtg ccggtaggat agggagagact gggtttagtc ctaatatcaa 420
 attgactggc tgggtgaact tcaacagcct tttaacctct ctgggagatg aaacagatgg 480
 cttaaggggc cagaaataga gatgctttgt aaaataaaat tttaaaaaaa gcaagtattt 540
 tatagcataa aggctagaga ccaaaataga taacaggatt ccctgaacat tcctaagagg 600
 gagaaagtat gttaaaaata gaaaaaccaa aatgcagaag gaggagactc acagagctaa 660
 accaggatgg ggaccctggg tcaggccagc ctctttgctc ctcccggaaa ttatttttgg 720
 tctgaccact ctgccttggt ttttgcagaa tcatgtgagg gccaacgggg gaaggtggag 780
 cagatgagca cacacaggag ccgtctcctc accgccgccc ctctcagcat ggaacagagg 840
 cagccctggc cccgggccct ggaggtggac agccgctctg tggctctgct ctcatgggtc 900
 tgggtgctgc tggccccccc agcagccggc atgacctcag tcagcacctt ccactctgag 960
 aatcgtgact ggaccttcaa ccacttgacc gtccaccaag ggacgggggc cgtctatgtg 1020
 ggggccatca accgggtcta taagctgaca ggcaacctga ccatccaggt ggctcataag 1080
 acagggccag aagaggacaa caagtctcgt taccgcccc tcatcgtgca gccctgcagc 1140
 gaagtgtcct ccctcaccaa caatgtcaac aagctgtcct tcattgacta ctctgagaac 1200
 cgcctgtctg cctgtgggag cctctaccag ggggtctgca agctgtctgc gctggatgac 1260
 ctcttcatcc tgggtggagc atcccacaag aaggagcact acctgtccag tgtcaacaag 1320
 acgggaccca tgtacggggg gattgtgcgc tctgaggggt aggatggcaa gctcttcac 1380
 ggacggcgtg tggatgggaa gcaggattac ttcccgaccc tgtccagccg gaagctgcc 1440
 cgagaccctg agtcctcagc catgctcgac tatgagctac acagcgattt tgtctcctct 1500
 ctcatcaaga tcccttcaga caccctggcc ctggtctccc actttgacat cttctacatc 1560
 tacggctttg ctagtggggg ctttgtctac tttctcactg tccagcccca gaccctgag 1620
 ggtgtggcca tcaactccgc tggagacctc ttctacacct caagcatcgt gcggctctgc 1680

```

aaggatgacc ccaagttcca ctcatacgtg tccctgccct tcggtgcac ccgggccggg 1740
gtggaatacc gctcctgca ggctgcttac ctggccaagc ctggggactc actggcccag 1800
gccttcaata tcaccagcca ggacgatgta ctctttgcca tcttctccaa agggcagaag 1860
cagtatcacc acccgccga tgactctgcc ctgtgtgcct tccctatccg ggccatcaac 1920
ttgcagatca aggagcgct gcagtctgc taccagggcg agggcaacct ggagctcaac 1980
tggctgctgg ggaaggacgt ccagtgcacg aaggcgctg tccccatcga tgataacttc 2040
tgtggactgg acatcaacca gcccctggga ggctcaactc cagtggaggg cctgaccctg 2100
tacaccacca gcagggaccg catgacctct gtggcctcct acgtttacaa cggctacagc 2160
gtgggttttg tggggactaa gagtggcaag ctgaaaaagg taagagtcta tgagttcaga 2220
tgctccaatg ccattcacct cctcagcaaa gagtccctct tggaaggtag ctattggtgg 2280
agatttaact ataggcaact ttattttctt ggggaacaaa ggtgaaatgg ggaggtaaga 2340
aggggttaat tttgtgactt agcttctagc tacttcctcc agccatcagt cattgggtat 2400
gtaaggaatg caagcgtatt tcaatatttc ccaaacttta agaaaaaact ttaagaagg 2460
acatctgcaa aagcaaa 2477

```

<210> 170

<211> 552

<212> PRT

<213> Homo sapiens

<400> 170

```

Met Gly Thr Leu Gly Gln Ala Ser Leu Phe Ala Pro Pro Gly Asn Tyr
  1             5             10             15

```

```

Phe Trp Ser Asp His Ser Ala Leu Cys Phe Ala Glu Ser Cys Glu Gly
      20             25             30

```

```

Gln Pro Gly Lys Val Glu Gln Met Ser Thr His Arg Ser Arg Leu Leu
      35             40             45

```

```

Thr Ala Ala Pro Leu Ser Met Glu Gln Arg Gln Pro Trp Pro Arg Ala
      50             55             60

```

```

Leu Glu Val Asp Ser Arg Ser Val Val Leu Leu Ser Val Val Trp Val
      65             70             75             80

```

```

Leu Leu Ala Pro Pro Ala Ala Gly Met Pro Gln Phe Ser Thr Phe His
      85             90             95

```

```

Ser Glu Asn Arg Asp Trp Thr Phe Asn His Leu Thr Val His Gln Gly
      100            105            110

```

```

Thr Gly Ala Val Tyr Val Gly Ala Ile Asn Arg Val Tyr Lys Leu Thr
      115            120            125

```

```

Gly Asn Leu Thr Ile Gln Val Ala His Lys Thr Gly Pro Glu Glu Asp
      130            135            140

```

```

Asn Lys Ser Arg Tyr Pro Pro Leu Ile Val Gln Pro Cys Ser Glu Val
      145            150            155            160

```

```

Leu Thr Leu Thr Asn Asn Val Asn Lys Leu Leu Ile Ile Asp Tyr Ser
      165            170            175

```

Glu Asn Arg Leu Leu Ala Cys Gly Ser Leu Tyr Gln Gly Val Cys Lys
 180 185 190
 Leu Leu Arg Leu Asp Asp Leu Phe Ile Leu Val Glu Pro Ser His Lys
 195 200 205
 Lys Glu His Tyr Leu Ser Ser Val Asn Lys Thr Gly Thr Met Tyr Gly
 210 215 220
 Val Ile Val Arg Ser Glu Gly Glu Asp Gly Lys Leu Phe Ile Gly Thr
 225 230 235 240
 Ala Val Asp Gly Lys Gln Asp Tyr Phe Pro Thr Leu Ser Ser Arg Lys
 245 250 255
 Leu Pro Arg Asp Pro Glu Ser Ser Ala Met Leu Asp Tyr Glu Leu His
 260 265 270
 Ser Asp Phe Val Ser Ser Leu Ile Lys Ile Pro Ser Asp Thr Leu Ala
 275 280 285
 Leu Val Ser His Phe Asp Ile Phe Tyr Ile Tyr Gly Phe Ala Ser Gly
 290 295 300
 Gly Phe Val Tyr Phe Leu Thr Val Gln Pro Glu Thr Pro Glu Gly Val
 305 310 315 320
 Ala Ile Asn Ser Ala Gly Asp Leu Phe Tyr Thr Ser Arg Ile Val Arg
 325 330 335
 Leu Cys Lys Asp Asp Pro Lys Phe His Ser Tyr Val Ser Leu Pro Phe
 340 345 350
 Gly Cys Thr Arg Ala Gly Val Glu Tyr Arg Leu Leu Gln Ala Ala Tyr
 355 360 365
 Leu Ala Lys Pro Gly Asp Ser Leu Ala Gln Ala Phe Asn Ile Thr Ser
 370 375 380
 Gln Asp Asp Val Leu Phe Ala Ile Phe Ser Lys Gly Gln Lys Gln Tyr
 385 390 395 400
 His His Pro Pro Asp Asp Ser Ala Leu Cys Ala Phe Pro Ile Arg Ala
 405 410 415
 Ile Asn Leu Gln Ile Lys Glu Arg Leu Gln Ser Cys Tyr Gln Gly Glu
 420 425 430
 Gly Asn Leu Glu Leu Asn Trp Leu Leu Gly Lys Asp Val Gln Cys Thr
 435 440 445
 Lys Ala Pro Val Pro Ile Asp Asp Asn Phe Cys Gly Leu Asp Ile Asn

| | | |
|---|-----|---------|
| 450 | 455 | 460 |
| Gln Pro Leu Gly Gly Ser Thr Pro Val Glu Gly Leu Thr Leu Tyr Thr | | |
| 465 | 470 | 475 480 |
| Thr Ser Arg Asp Arg Met Thr Ser Val Ala Ser Tyr Val Tyr Asn Gly | | |
| | 485 | 490 495 |
| Tyr Ser Val Val Phe Val Gly Thr Lys Ser Gly Lys Leu Lys Lys Val | | |
| | 500 | 505 510 |
| Arg Val Tyr Glu Phe Arg Cys Ser Asn Ala Ile His Leu Leu Ser Lys | | |
| | 515 | 520 525 |
| Glu Ser Leu Leu Glu Gly Ser Tyr Trp Trp Arg Phe Asn Tyr Arg Gln | | |
| | 530 | 535 540 |
| Leu Tyr Phe Leu Gly Glu Gln Arg | | |
| 545 | 550 | |

<210> 171

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 171

tggaataccg cctcctgcag

20

<210> 172

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 172

cttctgccct ttggagaaga tggc

24

<210> 173

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 173
ggactcactg gccagggcct tcaatatcac cagccaggac gat 42

<210> 174
<211> 3106
<212> DNA
<213> Homo sapiens

<220>
<221> modified_base
<222> (1683)
<223> a, t, c or g

<400> 174
aggctccccg gcgcggctga gtgcggactg gagtgggaac ccgggtcccc gcgcttagag 60
aacacgcgat gaccacgtgg agcctccggc ggaggccggc ccgcacgctg ggactcctgc 120
tgctggctcgt cttgggcttc ctgggtctcc gcaggctgga ctggagcacc ctgggtccctc 180
tgcggtcccg ccatcgacag ctggggctgc aggccaaagg ctggaacttc atgctggagg 240
attccacctt ctggatcttc gggggctcca tccactatit ccgtgtgccc agggagtact 300
ggagggaccg cctgctgaag atgaaggcct gtggcttgaa caccctcacc acctatgttc 360
cgtggaacct gcatgagcca gaaagaggca aatttgactt ctctgggaac ctggacctgg 420
aggccttcgt cctgatggcc gcagagatcg ggctgtgggt gattctgcgt ccaggccctt 480
acatctgcag tgagatggac ctcgggggct tgcccagctg gctactccaa gacctggca 540
tgaggctgag gacaacttac aagggttca ccgaagcagt ggacctttat tttgaccacc 600
tgatgtccag ggtggtgcc ctccagtaca agcgtggggg acctatcatt gccgtgcagg 660
tgagaaatga atatggttcc tataataaag accccgcata catgccctac gtcaagaagg 720
cactggagga ccgtggcatt gtggaactgc tcctgacttc agacaacaag gatgggctga 780
gcaaggggat tgtccagga gtcttgacca ccatcaactt gcagtcaaca cagagctgc 840
agctactgac cacccttctc ttcaacgtcc aggggactca gcccaagatg gtgatggagt 900
actggacggg gtggtttgac tctgtgggag gccctcaca tatcttggat tctctgagg 960
ttttgaaaac cgtgtctgcc attgtggacg ccggtcctc catcaacctc tacatgttcc 1020
acggaggcac caactttggc ttcatgaatg gagccatgca cttccatgac tacaagtcag 1080
atgtcaccag ctatgactat gatgctgtgc tgacagaagc cggcgattac acggccaagt 1140
acatgaagct tcgagacttc ttcggtcca tctcaggcat cctctccct ccccccactg 1200
accttcttcc caagatgccg tatgagccct taacgccagt cttgtacctg tctctgtggg 1260
acgccctcaa gtacctgggg gagccaatca agtctgaaaa gcccatcaac atggagaacc 1320
tgccagtcaa tgggggaaat ggacagtcct tcgggtacat tctctatgag accagcatca 1380
cctcgtctgg catcctcagt ggccacgtgc atgatcgggg gcagggtgtt gtgaacacag 1440
tatccatagg attcttggac tacaagacaa cgaagattgc tgtccccctg atccagggtt 1500
acaccgtgct gaggatcttg gtggagaatc gtgggcgagt caactatggg gagaatattg 1560
atgaccagcg caaaggctta attggaaatc tctatctgaa tgattcacc ctgaaaaact 1620
tcagaatcta tagcctggat atgaagaaga gcttctttca gaggttcggc ctggacaaat 1680
ggngttccct ccagaaaca cccacattac ctgcttctt cttgggtagc ttgtccatca 1740
gtccacgcc ttgtgacacc tttctgaagc tggaggctg ggagaagggg gttgtattca 1800
tcaatggcca gaaccttga cgttactgga acattggacc ccagaagacg ctttacctcc 1860
caggtccctg gttgagcagc ggaatcaacc aggtcatcgt tttgaggag acgatggcgg 1920
gcctgcatt acagttcacg gaaaccccc ccctgggag gaaccagtac attaatgag 1980
cggtggcacc ccctcctgct ggtgccagtg ggagactgcc gcctcctctt gacctgaagc 2040
ctggtggctg ctgccccacc cctcactgca aaagcatctc cttaagtagc aacctcaggg 2100
actgggggct acagtctgcc cctgtctcag ctcaaaaccc taagcctgca gggaaagggtg 2160
ggatggctct gggcctggct ttgttgatga tggttttct acagccctgc tcttgtgcgg 2220
aggctgtcgg gctgtctcta ggggtgggag agctaatac atcgcccagc ctttggccct 2280

```

cagaaaaagt gctgaaacgt gcccttgac cggacgtcac agccctgcga gcctctgctg 2340
gactcaggcg tgctctttgc tggttcctgg gaggttggc cacatccctc atggcccat 2400
tttatccccg aaatcctggg tgtgtcacca gtgtagaggg tggggaaggg gtgtctcacc 2460
tgagctgact ttgttcttcc ttcacaacct tctgagcctt ctttgggatt ctggaaggaa 2520
ctcggcgtga gaaacatgtg acttccccctt tcccttccca ctgctgctt cccacagggt 2580
gacaggctgg gctggagaaa cagaaatcct caccctgcgt cttcccaagt tagcagggtg 2640
ctctggtggt cagtgaggag gacatgtgag tcctggcaga agccatggcc catgtctgca 2700
catccaggga ggaggacaga agggccagct cacatgtgag tcctggcaga agccatggcc 2760
catgtctgca catccaggga ggaggacaga agggccagct cacatgtgag tcctggcaga 2820
agccatggcc catgtctgca catccaggga ggaggacaga agggccagct cacatgtgag 2880
tcctggcaga agccatggcc catgtctgca catccaggga ggaggacaga agggccagct 2940
cagtggcccc cgctccccac cccccacgcc cgaacagcag gggcagagca gccctccttc 3000
gaagtgtgtc caagtccgca tttgagcctt gttctggggc ccagcccaac acctggcttg 3060
ggctcactgt cctgagttgc agtaaagcta taaccttgaa tcacaa 3106

```

<210> 175

<211> 636

<212> PRT

<213> Homo sapiens

<220>

<221> MOD_RES

<222> (539)

<223> Any amino acid

<400> 175

```

Met Thr Thr Trp Ser Leu Arg Arg Arg Pro Ala Arg Thr Leu Gly Leu
  1              5              10              15

```

```

Leu Leu Leu Val Val Leu Gly Phe Leu Val Leu Arg Arg Leu Asp Trp
          20              25              30

```

```

Ser Thr Leu Val Pro Leu Arg Leu Arg His Arg Gln Leu Gly Leu Gln
    35              40              45

```

```

Ala Lys Gly Trp Asn Phe Met Leu Glu Asp Ser Thr Phe Trp Ile Phe
    50              55              60

```

```

Gly Gly Ser Ile His Tyr Phe Arg Val Pro Arg Glu Tyr Trp Arg Asp
    65              70              75              80

```

```

Arg Leu Leu Lys Met Lys Ala Cys Gly Leu Asn Thr Leu Thr Thr Tyr
          85              90              95

```

```

Val Pro Trp Asn Leu His Glu Pro Glu Arg Gly Lys Phe Asp Phe Ser
    100              105              110

```

```

Gly Asn Leu Asp Leu Glu Ala Phe Val Leu Met Ala Ala Glu Ile Gly
    115              120              125

```

```

Leu Trp Val Ile Leu Arg Pro Gly Pro Tyr Ile Cys Ser Glu Met Asp
    130              135              140

```

Leu Gly Gly Leu Pro Ser Trp Leu Leu Gln Asp Pro Gly Met Arg Leu
 145 150 155 160
 Arg Thr Thr Tyr Lys Gly Phe Thr Glu Ala Val Asp Leu Tyr Phe Asp
 165 170 175
 His Leu Met Ser Arg Val Val Pro Leu Gln Tyr Lys Arg Gly Gly Pro
 180 185 190
 Ile Ile Ala Val Gln Val Glu Asn Glu Tyr Gly Ser Tyr Asn Lys Asp
 195 200 205
 Pro Ala Tyr Met Pro Tyr Val Lys Lys Ala Leu Glu Asp Arg Gly Ile
 210 215 220
 Val Glu Leu Leu Leu Thr Ser Asp Asn Lys Asp Gly Leu Ser Lys Gly
 225 230 235 240
 Ile Val Gln Gly Val Leu Ala Thr Ile Asn Leu Gln Ser Thr His Glu
 245 250 255
 Leu Gln Leu Leu Thr Thr Phe Leu Phe Asn Val Gln Gly Thr Gln Pro
 260 265 270
 Lys Met Val Met Glu Tyr Trp Thr Gly Trp Phe Asp Ser Trp Gly Gly
 275 280 285
 Pro His Asn Ile Leu Asp Ser Ser Glu Val Leu Lys Thr Val Ser Ala
 290 295 300
 Ile Val Asp Ala Gly Ser Ser Ile Asn Leu Tyr Met Phe His Gly Gly
 305 310 315 320
 Thr Asn Phe Gly Phe Met Asn Gly Ala Met His Phe His Asp Tyr Lys
 325 330 335
 Ser Asp Val Thr Ser Tyr Asp Tyr Asp Ala Val Leu Thr Glu Ala Gly
 340 345 350
 Asp Tyr Thr Ala Lys Tyr Met Lys Leu Arg Asp Phe Phe Gly Ser Ile
 355 360 365
 Ser Gly Ile Pro Leu Pro Pro Pro Pro Asp Leu Leu Pro Lys Met Pro
 370 375 380
 Tyr Glu Pro Leu Thr Pro Val Leu Tyr Leu Ser Leu Trp Asp Ala Leu
 385 390 395 400
 Lys Tyr Leu Gly Glu Pro Ile Lys Ser Glu Lys Pro Ile Asn Met Glu
 405 410 415
 Asn Leu Pro Val Asn Gly Gly Asn Gly Gln Ser Phe Gly Tyr Ile Leu
 420 425 430

Tyr Glu Thr Ser Ile Thr Ser Ser Gly Ile Leu Ser Gly His Val His
435 440 445

Asp Arg Gly Gln Val Phe Val Asn Thr Val Ser Ile Gly Phe Leu Asp
450 455 460

Tyr Lys Thr Thr Lys Ile Ala Val Pro Leu Ile Gln Gly Tyr Thr Val
465 470 475 480

Leu Arg Ile Leu Val Glu Asn Arg Gly Arg Val Asn Tyr Gly Glu Asn
485 490 495

Ile Asp Asp Gln Arg Lys Gly Leu Ile Gly Asn Leu Tyr Leu Asn Asp
500 505 510

Ser Pro Leu Lys Asn Phe Arg Ile Tyr Ser Leu Asp Met Lys Lys Ser
515 520 525

Phe Phe Gln Arg Phe Gly Leu Asp Lys Trp Xaa Ser Leu Pro Glu Thr
530 535 540

Pro Thr Leu Pro Ala Phe Phe Leu Gly Ser Leu Ser Ile Ser Ser Thr
545 550 555 560

Pro Cys Asp Thr Phe Leu Lys Leu Glu Gly Trp Glu Lys Gly Val Val
565 570 575

Phe Ile Asn Gly Gln Asn Leu Gly Arg Tyr Trp Asn Ile Gly Pro Gln
580 585 590

Lys Thr Leu Tyr Leu Pro Gly Pro Trp Leu Ser Ser Gly Ile Asn Gln
595 600 605

Val Ile Val Phe Glu Glu Thr Met Ala Gly Pro Ala Leu Gln Phe Thr
610 615 620

Glu Thr Pro His Leu Gly Arg Asn Gln Tyr Ile Lys
625 630 635

<210> 176

<211> 2505

<212> DNA

<213> Homo sapiens

<400> 176

```

ggggacgcgg agctgagagg ctccgggcta gctaggtgta ggggtggacg ggtcccagga 60
ccctggtgag gggtctctac ttggccttcg gtgggggtca agacgcaggc acctacgcca 120
aaggggagca aagccgggct cggcccaggg cccccaggac ctccatctcc caatgttggg 180
ggaatccgac acgtgacggt ctgtccgccc tctcagacta gaggagcgct gtaaaccgcca 240
tggtcccaaa gaagctgtcc tgccttcgtt ccctgtgtgt gccgtcagc ctgacgctac 300
tgctgccccca ggcagacact cggtcgttcg tagtggatag gggtcatgac cggtttctcc 360
tagacggggc cccgttcgcg tatgtgtctg gcagcctgca ctactttcgg gtaccgcggg 420

```

```

tgctttgggc cgaccggcctt ttgaagatgc gatggagcgg cctcaacgcc atacagtttt 480
atgtgccttg gaactaccac gagccacagc ctgggggtcta taactttaat ggcagccggg 540
acctcattgc ctttctgaat gaggcagctc tagcgaacct gttggtcata ctgagaccag 600
gaccttacat ctgtgcagag tgggagatgg ggggtctccc atcctgggtg cttcgaaaac 660
ctgaaattca tctaagaacc tcagatccag acttcccttg cgcagtggac tcctggttca 720
aggtcttgct gcccaagata tatccatggc tttatcacaa tgggggcaac atcattagca 780
ttcaggtgga gaatgaatat ggtagctaca gagcctgtga cttcagctac atgaggcact 840
tggctgggct cttccgtgca ctgctaggag aaaagatctt gctcttcacc acagatgggc 900
ctgaaggact caagtgtggc tccctccggg gactctatac cactgtagat tttggcccag 960
ctgacaacat gacccaaaatc tttaccctgc ttcggaagta tgaaccccat gggccattgg 1020
taaactctga gtactacaca ggctggctgg attactgggg ccagaatcac tccacacggg 1080
ctgtgtcagc tgtaacccaaa ggactagaga acatgctcaa gttgggagcc agtgtgaaca 1140
tgtacatgtt ccatggaggt accaactttg gatattggaa tgggtgccat aagaaggagc 1200
gcttccctcc gattactacc agctatgact atgatgcacc tatactctgaa gcaggggacc 1260
ccacacctaa gctttttgct cttcgagatg tcatcagcaa gttccaggaa gttcctttgg 1320
gacctttacc tcccccgagc cccaagatga tgcctggacc tgtgactctg cacctggttg 1380
ggcatttact ggctttccta gacttgcttt gccccgtgg gccattcat tcaatcttgc 1440
caatgacctt tgaggctgtc aagcaggacc atggcttcat gttgtaccga acctatatga 1500
ccataccat ttttgagcca acaccattct ggggtgccaaa taatggagtc catgaccgtg 1560
cctatgtgat ggtggatggg gtgttccagg gtgttgtgga gcgaaatatg agagacaaac 1620
tatttttgac ggggaaactg ggggtccaaac tggatatctt ggtggagaac atggggaggc 1680
tcagctttgg gtctaacagc agtgacttca agggcctgtt gaagccacca attctggggc 1740
aaacaatcct taccagtggt atgatgttcc ctctgaaaat tgataacctt gtgaagtggg 1800
ggtttccctt ccagttgcca aaatggccat atcctcaagc tccttctggc cccacattct 1860
actccaaaac atttccaatt ttaggctcag ttggggacac atttctatat ctacctggat 1920
ggaccaaggg ccaagtctgg atcaatgggt ttaacttggg ccggtactgg acaaagcagg 1980
ggccacaaca gaccctctac gtgccaaagat tcctgctgtt tcctagggga gccctcaaca 2040
aaattacatt gctggaacta gaagatgtac ctctccagcc ccaagtccaa tttttggata 2100
agcctatcct caatagcact agtactttgc acaggacaca tatcaattcc ctttcagctg 2160
atacactgag tgctctgaa ccaatggagt taagtgggca ctgaaaggta ggccgggcat 2220
ggtggctcat gcctgtaatc ccagcacttt gggaggctga gacgggtgga ttacctgag 2280
tcaggacttc aagaccagcc tggccaacat ggtgaaaccc cgtctccact aaaaatacaa 2340
aaattagccg ggcgtgatgg tgggcacctc taatcccagc tacttgggag gctgagggca 2400
ggagaattgc ttgaatccag gaggcagagg ttgcagtga tggaggttgt accactgcac 2460
tccagcctgg ctgacagtga gacactccat ctcaaaaaaa aaaaaa 2505

```

<210> 177

<211> 654

<212> PRT

<213> Homo sapiens

<400> 177

```

Met Ala Pro Lys Lys Leu Ser Cys Leu Arg Ser Leu Leu Leu Pro Leu
  1              5              10              15

```

```

Ser Leu Thr Leu Leu Leu Pro Gln Ala Asp Thr Arg Ser Phe Val Val
          20              25              30

```

```

Asp Arg Gly His Asp Arg Phe Leu Leu Asp Gly Ala Pro Phe Arg Tyr
          35              40              45

```

```

Val Ser Gly Ser Leu His Tyr Phe Arg Val Pro Arg Val Leu Trp Ala
          50              55              60

```

Asp Arg Leu Leu Lys Met Arg Trp Ser Gly Leu Asn Ala Ile Gln Phe
 65 70 75 80
 Tyr Val Pro Trp Asn Tyr His Glu Pro Gln Pro Gly Val Tyr Asn Phe
 85 90 95
 Asn Gly Ser Arg Asp Leu Ile Ala Phe Leu Asn Glu Ala Ala Leu Ala
 100 105 110
 Asn Leu Leu Val Ile Leu Arg Pro Gly Pro Tyr Ile Cys Ala Glu Trp
 115 120 125
 Glu Met Gly Gly Leu Pro Ser Trp Leu Leu Arg Lys Pro Glu Ile His
 130 135 140
 Leu Arg Thr Ser Asp Pro Asp Phe Leu Ala Ala Val Asp Ser Trp Phe
 145 150 155 160
 Lys Val Leu Leu Pro Lys Ile Tyr Pro Trp Leu Tyr His Asn Gly Gly
 165 170 175
 Asn Ile Ile Ser Ile Gln Val Glu Asn Glu Tyr Gly Ser Tyr Arg Ala
 180 185 190
 Cys Asp Phe Ser Tyr Met Arg His Leu Ala Gly Leu Phe Arg Ala Leu
 195 200 205
 Leu Gly Glu Lys Ile Leu Leu Phe Thr Thr Asp Gly Pro Glu Gly Leu
 210 215 220
 Lys Cys Gly Ser Leu Arg Gly Leu Tyr Thr Thr Val Asp Phe Gly Pro
 225 230 235 240
 Ala Asp Asn Met Thr Lys Ile Phe Thr Leu Leu Arg Lys Tyr Glu Pro
 245 250 255
 His Gly Pro Leu Val Asn Ser Glu Tyr Tyr Thr Gly Trp Leu Asp Tyr
 260 265 270
 Trp Gly Gln Asn His Ser Thr Arg Ser Val Ser Ala Val Thr Lys Gly
 275 280 285
 Leu Glu Asn Met Leu Lys Leu Gly Ala Ser Val Asn Met Tyr Met Phe
 290 295 300
 His Gly Gly Thr Asn Phe Gly Tyr Trp Asn Gly Ala Asp Lys Lys Gly
 305 310 315 320
 Arg Phe Leu Pro Ile Thr Thr Ser Tyr Asp Tyr Asp Ala Pro Ile Ser
 325 330 335
 Glu Ala Gly Asp Pro Thr Pro Lys Leu Phe Ala Leu Arg Asp Val Ile

| | | | | | |
|-----|---|-------------------------|-----------------|--|-----|
| | 340 | | 345 | | 350 |
| Ser | Lys Phe Gln Glu Val | Pro Leu Gly Pro Leu Pro | Pro Pro Ser Pro | | |
| | 355 | 360 | 365 | | |
| Lys | Met Met Leu Gly Pro Val Thr Leu His Leu Val Gly His Leu Leu | | | | |
| | 370 | 375 | 380 | | |
| Ala | Phe Leu Asp Leu Leu Cys Pro Arg Gly Pro Ile His Ser Ile Leu | | | | |
| 385 | | 390 | 395 | | 400 |
| Pro | Met Thr Phe Glu Ala Val Lys Gln Asp His Gly Phe Met Leu Tyr | | | | |
| | | 405 | 410 | | 415 |
| Arg | Thr Tyr Met Thr His Thr Ile Phe Glu Pro Thr Pro Phe Trp Val | | | | |
| | | 420 | 425 | | 430 |
| Pro | Asn Asn Gly Val His Asp Arg Ala Tyr Val Met Val Asp Gly Val | | | | |
| | | 435 | 440 | | 445 |
| Phe | Gln Gly Val Val Glu Arg Asn Met Arg Asp Lys Leu Phe Leu Thr | | | | |
| | | 450 | 455 | | 460 |
| Gly | Lys Leu Gly Ser Lys Leu Asp Ile Leu Val Glu Asn Met Gly Arg | | | | |
| 465 | | 470 | 475 | | 480 |
| Leu | Ser Phe Gly Ser Asn Ser Ser Asp Phe Lys Gly Leu Leu Lys Pro | | | | |
| | | 485 | 490 | | 495 |
| Pro | Ile Leu Gly Gln Thr Ile Leu Thr Gln Trp Met Met Phe Pro Leu | | | | |
| | | 500 | 505 | | 510 |
| Lys | Ile Asp Asn Leu Val Lys Trp Trp Phe Pro Leu Gln Leu Pro Lys | | | | |
| | | 515 | 520 | | 525 |
| Trp | Pro Tyr Pro Gln Ala Pro Ser Gly Pro Thr Phe Tyr Ser Lys Thr | | | | |
| | | 530 | 535 | | 540 |
| Phe | Pro Ile Leu Gly Ser Val Gly Asp Thr Phe Leu Tyr Leu Pro Gly | | | | |
| 545 | | 550 | 555 | | 560 |
| Trp | Thr Lys Gly Gln Val Trp Ile Asn Gly Phe Asn Leu Gly Arg Tyr | | | | |
| | | 565 | 570 | | 575 |
| Trp | Thr Lys Gln Gly Pro Gln Gln Thr Leu Tyr Val Pro Arg Phe Leu | | | | |
| | | 580 | 585 | | 590 |
| Leu | Phe Pro Arg Gly Ala Leu Asn Lys Ile Thr Leu Leu Glu Leu Glu | | | | |
| | | 595 | 600 | | 605 |
| Asp | Val Pro Leu Gln Pro Gln Val Gln Phe Leu Asp Lys Pro Ile Leu | | | | |
| | | 610 | 615 | | 620 |

Asn Ser Thr Ser Thr Leu His Arg Thr His Ile Asn Ser Leu Ser Ala
 625 630 635 640

Asp Thr Leu Ser Ala Ser Glu Pro Met Glu Leu Ser Gly His
 645 650

<210> 178
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 178
 tggctactcc aagaccctgg catg 24

<210> 179
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 179
 tggacaaaatc cccttgctca gccc 24

<210> 180
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 180
 gggcttcacc gaagcagtgg acctttatatt tgaccacctg atgtccaggg 50

<210> 181
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 181
 ccagctatga ctatgatgca cc 22

| <400> 184 | | | | | | | |
|------------|-------------|-------------|-------------|-------------|------------|-------------|------|
| gctttgaaca | cgtctgcaag | cccaaagt | atg | atctgat | tggttatgag | gtattttgagt | 60 |
| gcacccacaa | tatggcttac | atggtgaaaa | agcttctcat | cagttacata | tccattat | ttt | 120 |
| gtgtttatgg | ctttatctgc | ctctacactc | tcttctgggt | attcaggata | cctttgaagg | | 180 |
| aatattcttt | cgaaaaagtc | agagaagaga | gcagttttag | tgacattcca | gatgtcaaaa | | 240 |
| acgattttgc | gttcttcttt | cacatggtag | accagtatga | ccagctatat | tccaagcg | tt | 300 |
| ttgggtgtgt | cttgtcagaa | gttagtgaaa | ataaacttag | ggaaattagt | ttgaaccatg | | 360 |
| agtggacatt | tgaaaaactc | aggcagcaca | tttcacgcaa | cgcccaggac | aagcaggagt | | 420 |
| tgcatctggt | catgctgtcg | ggggtgcccg | atgctgtctt | tgacctcaca | gacctggatg | | 480 |
| tgctaaagct | tgaactaatt | ccagaagcta | aaattcctgc | taagatttct | caaatgacta | | 540 |
| acctccaaga | gctccacctc | tgccactgcc | ctgcaaaaagt | tgaacagact | gcttttagct | | 600 |
| ttcttcgcga | tcacttgaga | tgcttccacg | tgaagttcac | tgatgtggct | gaaattcctg | | 660 |
| cctgggtgta | tttgtc | caaa | aaccttcgag | agttgtactt | aataggcaat | ttgaactctg | 720 |
| aaaacaataa | gatgatagga | cttgaatctc | tccgagagtt | gcggcacctt | aagattctcc | | 780 |
| acgtgaagag | caatttgacc | aaagttccct | ccaacattac | agatgtggct | ccacattcta | | 840 |
| caaagttagt | cattcataat | gacggcacta | aactcttggt | actgaacagc | cttaagaaaa | | 900 |
| tgatgaatgt | cgctgagctg | gaactccaga | actgtgagct | agagagaatc | ccacatgcta | | 960 |
| ttttcagcct | ctctaattta | caggaaactgg | attttaaagtc | caataaacatt | cgcacaattg | | 1020 |
| aggaaatcat | cagtattccag | catttaaaaac | gactgacttg | ttttaaatta | tggcataaca | | 1080 |
| aaattgttac | tattcctccc | tctattacc | atgtcaaaaa | cttggagtgca | ctttatttct | | 1140 |
| ctaacaacaa | gctcgaatcc | ttaccagtgg | cagtatttag | tttacagaaa | ctcagatgct | | 1200 |
| tagatgtgag | ctacaacaac | atttcaatga | ttccaataga | aataggattg | cttcagaacc | | 1260 |
| tgcagcattt | gcataatcact | gggaacaaag | tggacattct | gccaaaaacaa | ttgttttaat | | 1320 |

```

gcataaaagtt gaggactttg aatctgggac agaactgcat cacctcactc ccagagaaaag 1380
ttggtcagct ctcccagctc actcagctgg agctgaaggg gaactgcttg gaccgcctgc 1440
cagcccagct gggccagtgt cggatgctca agaaaagcgg gcttggttg gaagatcacc 1500
tttttgatac cctgccactc gaagtcaaag aggcattgaa tcaagacata aatattccct 1560
ttgcaaatgg gatttaaact aagataatat atgcacagtg atgtgcagga acaacttcct 1620
agattgcaag tgctcacgta caagttatta caagataatg catttttagga gtagatacat 1680
ctttttaaataaaaacagaga ggatgcatag aaggctgata gaagacataa ctgaatgttc 1740
aatgtttgta ggggttttaag tcattcattt ccaaattcatt tttttttttc ttttggggaa 1800
agggaaggaa aaattataat cactaatctt gggtcttttt aaattgtttg taacttggat 1860
gctgccgcta ctgaatgttt acaaattgct tgccctgctaa agtaaatgat taaattgaca 1920
ttttcttact aaaaaaaaaa aaaaaaaa 1947

```

<210> 185

<211> 501

<212> PRT

<213> Homo sapiens

<400> 185

```

Met Ala Tyr Met Leu Lys Lys Leu Leu Ile Ser Tyr Ile Ser Ile Ile
  1             5             10             15

```

```

Cys Val Tyr Gly Phe Ile Cys Leu Tyr Thr Leu Phe Trp Leu Phe Arg
      20             25             30

```

```

Ile Pro Leu Lys Glu Tyr Ser Phe Glu Lys Val Arg Glu Glu Ser Ser
      35             40             45

```

```

Phe Ser Asp Ile Pro Asp Val Lys Asn Asp Phe Ala Phe Leu Leu His
      50             55             60

```

```

Met Val Asp Gln Tyr Asp Gln Leu Tyr Ser Lys Arg Phe Gly Val Phe
      65             70             75             80

```

```

Leu Ser Glu Val Ser Glu Asn Lys Leu Arg Glu Ile Ser Leu Asn His
      85             90             95

```

```

Glu Trp Thr Phe Glu Lys Leu Arg Gln His Ile Ser Arg Asn Ala Gln
     100             105             110

```

```

Asp Lys Gln Glu Leu His Leu Phe Met Leu Ser Gly Val Pro Asp Ala
     115             120             125

```

```

Val Phe Asp Leu Thr Asp Leu Asp Val Leu Lys Leu Glu Leu Ile Pro
     130             135             140

```

```

Glu Ala Lys Ile Pro Ala Lys Ile Ser Gln Met Thr Asn Leu Gln Glu
     145             150             155             160

```

```

Leu His Leu Cys His Cys Pro Ala Lys Val Glu Gln Thr Ala Phe Ser
     165             170             175

```

```

Phe Leu Arg Asp His Leu Arg Cys Leu His Val Lys Phe Thr Asp Val
     180             185             190

```

Ala Glu Ile Pro Ala Trp Val Tyr Leu Leu Lys Asn Leu Arg Glu Leu
 195 200 205
 Tyr Leu Ile Gly Asn Leu Asn Ser Glu Asn Asn Lys Met Ile Gly Leu
 210 215 220
 Glu Ser Leu Arg Glu Leu Arg His Leu Lys Ile Leu His Val Lys Ser
 225 230 235 240
 Asn Leu Thr Lys Val Pro Ser Asn Ile Thr Asp Val Ala Pro His Leu
 245 250 255
 Thr Lys Leu Val Ile His Asn Asp Gly Thr Lys Leu Leu Val Leu Asn
 260 265 270
 Ser Leu Lys Lys Met Met Asn Val Ala Glu Leu Glu Leu Gln Asn Cys
 275 280 285
 Glu Leu Glu Arg Ile Pro His Ala Ile Phe Ser Leu Ser Asn Leu Gln
 290 295 300
 Glu Leu Asp Leu Lys Ser Asn Asn Ile Arg Thr Ile Glu Glu Ile Ile
 305 310 315 320
 Ser Phe Gln His Leu Lys Arg Leu Thr Cys Leu Lys Leu Trp His Asn
 325 330 335
 Lys Ile Val Thr Ile Pro Pro Ser Ile Thr His Val Lys Asn Leu Glu
 340 345 350
 Ser Leu Tyr Phe Ser Asn Asn Lys Leu Glu Ser Leu Pro Val Ala Val
 355 360 365
 Phe Ser Leu Gln Lys Leu Arg Cys Leu Asp Val Ser Tyr Asn Asn Ile
 370 375 380
 Ser Met Ile Pro Ile Glu Ile Gly Leu Leu Gln Asn Leu Gln His Leu
 385 390 395 400
 His Ile Thr Gly Asn Lys Val Asp Ile Leu Pro Lys Gln Leu Phe Lys
 405 410 415
 Cys Ile Lys Leu Arg Thr Leu Asn Leu Gly Gln Asn Cys Ile Thr Ser
 420 425 430
 Leu Pro Glu Lys Val Gly Gln Leu Ser Gln Leu Thr Gln Leu Glu Leu
 435 440 445
 Lys Gly Asn Cys Leu Asp Arg Leu Pro Ala Gln Leu Gly Gln Cys Arg
 450 455 460
 Met Leu Lys Lys Ser Gly Leu Val Val Glu Asp His Leu Phe Asp Thr

465 470 475 480
 Leu Pro Leu Glu Val Lys Glu Ala Leu Asn Gln Asp Ile Asn Ile Pro
 485 490 495
 Phe Ala Asn Gly Ile
 500

<210> 186
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 186
 cctccctcta ttacccatgt c 21

<210> 187
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 187
 gaccaacttt ctctgggagt gagg 24

<210> 188
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 188
 gtcactttat ttctctaaca acaagctcga atccttacca gtggcag 47

<210> 189
 <211> 2917
 <212> DNA
 <213> Homo sapiens

<400> 189
 cccacgcgtc cggccttctc tctggacttt gcatttccat tccttttcat tgacaaactg 60
 acttttttta tttctttttt tccatctctg ggccagcttg ggatcctagg ccgccctggg 120
 aagacatttg tgttttacac acataaggat ctgtgtttgg ggtttcttct tcctcccttg 180

acattggcat tgcttagtgg ttgtgtgggg agggagacca cgtgggctca gtgcttgctt 240
 gcacttatct gcctaggtac atcgaagtct tttgacctcc atacagtgat tatgcctgtc 300
 atcgctgggtg gtatcctggc ggccttgctc ctgctgatat ttgtcgtgct ctgtcctttac 360
 ttcaaaatac acaacgcgct aaaagctgca aaggaaacctg aagctgtggc tgtaaaaaat 420
 cacaacccag acaagggtgtg gtgggcccaag aacagccagg ccaaaacccat tgccacggag 480
 tcttgtcctg ccctgcagtg ctgtgaagga tatagaatgt gtgccagttt tgattccctg 540
 ccaccttgct gttgcgacat aaatgagggc ctctgagtta ggaaaggctc ccttctcaaa 600
 gcagagccct gaagacttca atgatgtcaa tgaggccacc tgtttgtgat gtgcaggcac 660
 agaagaaagg cacagctccc catcagtttc atggaaaata actcagtgcc tgctgggaac 720
 cagctgctgg agatccctac agagagcttc cactgggggc aaccttcca ggaaggagt 780
 ggggagagag aacctcact gtggggaatg ctgataaacc agtcacacag ctgctctatt 840
 ctcacacaaa tctacctctt gcgtggctgg aactgacgtt tccctggagg tgtccagaaa 900
 gctgatgtaa cacagagcct ataaaagctg tcggtcctta aggctgcccc gcgccttgcc 960
 aaaatggagc ttgtaagaag gctcatgcca ttgacctct taattctctc ctggttggcg 1020
 gagctgacaa tggcgaggc tgaaggcaat gcaagctgca cagtcagtc aggggggacc 1080
 aatagggcag agaccacaa agccatgatc ctgcaactca atcccagtg gaactgcacc 1140
 tggacaaatg aaagaccaga aaacaaaagc atcagaatta tcttttctta tgtccagctt 1200
 gatccagatg gaagctgtga aagtgaaaac attaaagtct ttgacggaac ctccagcaat 1260
 gggcctctgc tagggcaagt ctgcagtaaa aacgactatg ttctgtatt tgaatcatca 1320
 tccagtacat tgacgtttca aatagttact gactcagcaa gaattcaaag aactgtcttt 1380
 gtcttctact acttctctc tctaacatc tctattcaa actgtggcg ttacctggat 1440
 accttggaag gatccttcac cagcccaat tacccaaagc cgcacctga gctggcttat 1500
 tgtgtgtggc acatacaagt ggagaaagat tacaagataa aactaaactt caaagagatt 1560
 ttcctagaaa tagacaaaca gtgcaaattt gattttcttg ccatctatga tggccctcc 1620
 accaactctg gcctgattgg acaagtctgt ggccgtgtga ctcccacctt cgaatcgtca 1680
 tcaaactctc tgactgtcgt gttgtctaca gattatgcca attcttaccg gggattttct 1740
 gcttctaca cctcaattta tgcagaaaac atcaacacta catctttaac ttgctcttct 1800
 gacaggatga gagttattat aagcaaacc tacctagagg cttttaactc taatgggaat 1860
 aacttgcaac taaaagacc aacttgca ccaaaattat caaatgtgt ggaattttct 1920
 gtccctctta atggatgtgg tacaatcaga aaggtagaag atcagtcaat tacttacacc 1980
 aatataatca cttttctgc atctcaact tctgaagtga tcaccctca gaaacaactc 2040
 cagattattg tgaagtgtga aatgggacat aattctacag tggagataat atacataaca 2100
 gaagatgatg taatacaaa tcaaaatgca ctgggcaaat ataacaccag catggctctt 2160
 tttgaatcca attcatttga aaagactata ctggaatcac catattatgt ggatttgaac 2220
 caaactcttt ttgttcaagt tagtctgcac acctcagatc caaatttggg ggtgtttctt 2280
 gatacctgta gagcctctcc cactctgac tttgcatctc caacctacga cctaatacaag 2340
 agtggatgta gtcgagatga aacttgtaag gtgtatccct tatttggaca ctatgggaga 2400
 ttccagttta atgcctttta attcttgaga agtatgagct ctgtgtatct gcagtgtaaa 2460
 gttttgatat gtgatagcag tgaccaccag tctcgctgca atcaagggtg tgtctccaga 2520
 agcaaacgag acatttcttc atataaatgg aaaacagatt ccatcatagg acccattcgt 2580
 ctgaaaaggg atcgaagtgc aagtggcaat tcaggatttc agcatgaaac acatgcggaa 2640
 gaaactccaa accagccttt caacagtgtg catctgtttt ccttcatggt tctagctctg 2700
 aatgtgggtga ctgtagcgac aatcacagtg aggcattttg taaatcaacg ggagactac 2760
 aaataccaga agctgcagaa ctattaacta acaggtccaa ccctaagtga gacatgttc 2820
 tccaggatgc caaaggaaat gctacctcgt ggctacacat attatgaata aatgaggaag 2880
 ggctgaaag tgacacacag gcctgcatgt aaaaaa 2917

<210> 190

<211> 607

<212> PRT

<213> Homo sapiens

<400> 190

Met Glu Leu Val Arg Arg Leu Met Pro Leu Thr Leu Leu Ile Leu Ser
 1 5 10 15
 Cys Leu Ala Glu Leu Thr Met Ala Glu Ala Glu Gly Asn Ala Ser Cys
 20 25 30
 Thr Val Ser Leu Gly Gly Ala Asn Met Ala Glu Thr His Lys Ala Met
 35 40 45
 Ile Leu Gln Leu Asn Pro Ser Glu Asn Cys Thr Trp Thr Ile Glu Arg
 50 55 60
 Pro Glu Asn Lys Ser Ile Arg Ile Ile Phe Ser Tyr Val Gln Leu Asp
 65 70 75 80
 Pro Asp Gly Ser Cys Glu Ser Glu Asn Ile Lys Val Phe Asp Gly Thr
 85 90 95
 Ser Ser Asn Gly Pro Leu Leu Gly Gln Val Cys Ser Lys Asn Asp Tyr
 100 105 110
 Val Pro Val Phe Glu Ser Ser Ser Ser Thr Leu Thr Phe Gln Ile Val
 115 120 125
 Thr Asp Ser Ala Arg Ile Gln Arg Thr Val Phe Val Phe Tyr Tyr Phe
 130 135 140
 Phe Ser Pro Asn Ile Ser Ile Pro Asn Cys Gly Gly Tyr Leu Asp Thr
 145 150 155 160
 Leu Glu Gly Ser Phe Thr Ser Pro Asn Tyr Pro Lys Pro His Pro Glu
 165 170 175
 Leu Ala Tyr Cys Val Trp His Ile Gln Val Glu Lys Asp Tyr Lys Ile
 180 185 190
 Lys Leu Asn Phe Lys Glu Ile Phe Leu Glu Ile Asp Lys Gln Cys Lys
 195 200 205
 Phe Asp Phe Leu Ala Ile Tyr Asp Gly Pro Ser Thr Asn Ser Gly Leu
 210 215 220
 Ile Gly Gln Val Cys Gly Arg Val Thr Pro Thr Phe Glu Ser Ser Ser
 225 230 235 240
 Asn Ser Leu Thr Val Val Leu Ser Thr Asp Tyr Ala Asn Ser Tyr Arg
 245 250 255
 Gly Phe Ser Ala Ser Tyr Thr Ser Ile Tyr Ala Glu Asn Ile Asn Thr
 260 265 270
 Thr Ser Leu Thr Cys Ser Ser Asp Arg Met Arg Val Ile Ile Ser Lys
 275 280 285

Ser Tyr Leu Glu Ala Phe Asn Ser Asn Gly Asn Asn Leu Gln Leu Lys
 290 295 300
 Asp Pro Thr Cys Arg Pro Lys Leu Ser Asn Val Val Glu Phe Ser Val
 305 310 315 320
 Pro Leu Asn Gly Cys Gly Thr Ile Arg Lys Val Glu Asp Gln Ser Ile
 325 330 335
 Thr Tyr Thr Asn Ile Ile Thr Phe Ser Ala Ser Ser Thr Ser Glu Val
 340 345 350
 Ile Thr Arg Gln Lys Gln Leu Gln Ile Ile Val Lys Cys Glu Met Gly
 355 360 365
 His Asn Ser Thr Val Glu Ile Ile Tyr Ile Thr Glu Asp Asp Val Ile
 370 375 380
 Gln Ser Gln Asn Ala Leu Gly Lys Tyr Asn Thr Ser Met Ala Leu Phe
 385 390 395 400
 Glu Ser Asn Ser Phe Glu Lys Thr Ile Leu Glu Ser Pro Tyr Tyr Val
 405 410 415
 Asp Leu Asn Gln Thr Leu Phe Val Gln Val Ser Leu His Thr Ser Asp
 420 425 430
 Pro Asn Leu Val Val Phe Leu Asp Thr Cys Arg Ala Ser Pro Thr Ser
 435 440 445
 Asp Phe Ala Ser Pro Thr Tyr Asp Leu Ile Lys Ser Gly Cys Ser Arg
 450 455 460
 Asp Glu Thr Cys Lys Val Tyr Pro Leu Phe Gly His Tyr Gly Arg Phe
 465 470 475 480
 Gln Phe Asn Ala Phe Lys Phe Leu Arg Ser Met Ser Ser Val Tyr Leu
 485 490 495
 Gln Cys Lys Val Leu Ile Cys Asp Ser Ser Asp His Gln Ser Arg Cys
 500 505 510
 Asn Gln Gly Cys Val Ser Arg Ser Lys Arg Asp Ile Ser Ser Tyr Lys
 515 520 525
 Trp Lys Thr Asp Ser Ile Ile Gly Pro Ile Arg Leu Lys Arg Asp Arg
 530 535 540
 Ser Ala Ser Gly Asn Ser Gly Phe Gln His Glu Thr His Ala Glu Glu
 545 550 555 560
 Thr Pro Asn Gln Pro Phe Asn Ser Val His Leu Phe Ser Phe Met Val

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 565 | | 570 | | 575 | | | | | | | | | | |
| Leu | Ala | Leu | Asn | Val | Val | Thr | Val | Ala | Thr | Ile | Thr | Val | Arg | His | Phe |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Val | Asn | Gln | Arg | Ala | Asp | Tyr | Lys | Tyr | Gln | Lys | Leu | Gln | Asn | Tyr | |
| | | | 595 | | | | 600 | | | | | 605 | | | |

<210> 191
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 191
 tctctattcc aaactgtggc g 21

<210> 192
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 192
 tttgatgacg attcgaaggt gg 22

<210> 193
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 193
 ggaaggatcc ttcaccagcc ccaattaccc aaagccgcat cctgagc 47

<210> 194
 <211> 2362
 <212> DNA
 <213> Homo sapiens

<400> 194
 gacggaagaa cagcgctccc gaggccgcgg gagcctgcag agaggacagc cggcctgcgc 60
 cgggacatgc ggccccagga gctccccagg ctgcggttcc cggtgctgct gttgctgttg 120
 ctgctgctgc cgccgcgcgc gtgcctgcc cacagcgcca cgcgcttcga cccacctgg 180


```

gagtcacctgg acgcccgcga gctgcccgcg tggtttgacc aggccaaagt cgccatcttc 240
atccactggg gagtggtttc cgtgcccagc ttcggtagcg agtggttctg gtggtattgg 300
caaaaggaaa agataccgaa gtatgtggaa tttatgaaag ataattaccc tcctagtttc 360
aaatatgaag attttggacc actatttaca gcaaaatttt ttaatgcaa ccagtgggca 420
gatatttttc aggcctctgg tgccaaatac attgtcttaa cttccaaaca tcatgaaggc 480
tttaccttgt gggggtcaga atattcgtgg aactggaatg ccatagatga ggggcccaag 540
agggacattg tcaaggaact tgaggtagcc attaggaaca gaactgacct gcgttttgga 600
ctgtactatt ccctttttga atggtttcat ccgctcttcc ttgaggatga atccagttca 660
ttccataagc ggcaatttcc agtttctaag acattgccag agctctatga gtagtgaac 720
aactatcagc ctgaggttct gtggtcggat ggtgacggag gaggaccgga tcaatactgg 780
aacagcacag gcttcttggc ctggttatat aatgaaagcc cagttcgggg cacagtagtc 840
accaatgate gttggggagc tggtagcatc tgtaagcatg gtggcttcta tacctgcagt 900
gatcggtata acccaggaca tcttttgcca cataaatggg aaaactgcat gacaatagac 960
aaactgtcct ggggctatag gagggaagct ggaatctctg actatcttac aattgaagaa 1020
ttggtgaagc aactgttaga gacagtttca tgtggaggaa atcttttgat gaattattgg 1080
cccacactag atggcaccat ttctgtagtt tttgaggagc gactgaggca agtggggtcc 1140
tggctaaaag tcaatggaga agctatttat gaaacctata cctggcgatc ccagaatgac 1200
actgtcacc cagatgtgtg gtacacatcc aagcctaaag aaaaattagt ctatgccatt 1260
tttcttaaat ggccacatc aggacagctg ttccttggcc atcccaaagc tattctgggg 1320
gcaacagagg tgaaactact gggccatgga cagccactta actggatttc tttggagcaa 1380
aatggcatta tggtagaact gccacagcta accattcadc agatgccgtg taaatggggc 1440
tgggctctag ccctaactaa tgtgatctaa agtgcagcag agtggctgat gctgcaagtt 1500
atgtctaagg ctaggaacta tcaggtgtct ataattgtag cacatggaga aagcaatgta 1560
aactggataa gaaaattatt tggcagttca gccctttccc tttttccac taaatttttc 1620
ttaaattacc catgtaacca ttttaactct ccagtgcact ttgccattaa agtctcttca 1680
cattgatttg tttccatgtg tgactcagag gtgagaattt tttcacatta tagtagcaag 1740
gaattggtgg tattatggac cgaactgaaa attttatgtt gaagccatat ccccatgat 1800
tatatagtta tgcatactt aatatgggga tttttcttgg gaaatgcatt gctagtcaat 1860
ttttttttgt gccaacatca tagagtgtat ttacaaaatc ctatagtgca tagcctacta 1920
cacaccta at gtgtatggta tagactgttg ctcttaggct acagacatat acagcatgtt 1980
actgaatact gtaggcaata gtaacagtgg tatttgtata tcgaaacata tggaaacata 2040
gagaaggtag agtaaaaata ctgtaaaata aatggtgcac ctgtataggg cacttaccac 2100
gaatggagct tacaggactg gaagttgctc tgggtgagtc agtgagtga tgtgaaggcc 2160
taggacatta ttgaacactg ccagacgtta taaatactgt atgcttaggc tacactacat 2220
ttataaaaaa aagtttttct ttcttcaatt ataaattaac ataagtgtac tgtaacttta 2280
caaacgtttt aattttttaa accttttttg ctcttttgta ataacttca gcttaaaaca 2340
taaactcatt gtgcaaatgt aa 2362

```

<210> 195

<211> 467

<212> PRT

<213> Homo sapiens

<400> 195

Met Arg Pro Gln Glu Leu Pro Arg Leu Ala Phe Pro Leu Leu Leu Leu
1 5 10 15

Leu Leu Leu Leu Leu Pro Pro Pro Pro Cys Pro Ala His Ser Ala Thr
20 25 30

Arg Phe Asp Pro Thr Trp Glu Ser Leu Asp Ala Arg Gln Leu Pro Ala
35 40 45

Trp Phe Asp Gln Ala Lys Phe Gly Ile Phe Ile His Trp Gly Val Phe
 50 55 60
 Ser Val Pro Ser Phe Gly Ser Glu Trp Phe Trp Trp Tyr Trp Gln Lys
 65 70 75 80
 Glu Lys Ile Pro Lys Tyr Val Glu Phe Met Lys Asp Asn Tyr Pro Pro
 85 90 95
 Ser Phe Lys Tyr Glu Asp Phe Gly Pro Leu Phe Thr Ala Lys Phe Phe
 100 105 110
 Asn Ala Asn Gln Trp Ala Asp Ile Phe Gln Ala Ser Gly Ala Lys Tyr
 115 120 125
 Ile Val Leu Thr Ser Lys His His Glu Gly Phe Thr Leu Trp Gly Ser
 130 135 140
 Glu Tyr Ser Trp Asn Trp Asn Ala Ile Asp Glu Gly Pro Lys Arg Asp
 145 150 155 160
 Ile Val Lys Glu Leu Glu Val Ala Ile Arg Asn Arg Thr Asp Leu Arg
 165 170 175
 Phe Gly Leu Tyr Tyr Ser Leu Phe Glu Trp Phe His Pro Leu Phe Leu
 180 185 190
 Glu Asp Glu Ser Ser Ser Phe His Lys Arg Gln Phe Pro Val Ser Lys
 195 200 205
 Thr Leu Pro Glu Leu Tyr Glu Leu Val Asn Asn Tyr Gln Pro Glu Val
 210 215 220
 Leu Trp Ser Asp Gly Asp Gly Gly Ala Pro Asp Gln Tyr Trp Asn Ser
 225 230 235 240
 Thr Gly Phe Leu Ala Trp Leu Tyr Asn Glu Ser Pro Val Arg Gly Thr
 245 250 255
 Val Val Thr Asn Asp Arg Trp Gly Ala Gly Ser Ile Cys Lys His Gly
 260 265 270
 Gly Phe Tyr Thr Cys Ser Asp Arg Tyr Asn Pro Gly His Leu Leu Pro
 275 280 285
 His Lys Trp Glu Asn Cys Met Thr Ile Asp Lys Leu Ser Trp Gly Tyr
 290 295 300
 Arg Arg Glu Ala Gly Ile Ser Asp Tyr Leu Thr Ile Glu Glu Leu Val
 305 310 315 320
 Lys Gln Leu Val Glu Thr Val Ser Cys Gly Gly Asn Leu Leu Met Asn
 325 330 335

Ile Gly Pro Thr Leu Asp Gly Thr Ile Ser Val Val Phe Glu Glu Arg
 340 345 350

Leu Arg Gln Val Gly Ser Trp Leu Lys Val Asn Gly Glu Ala Ile Tyr
 355 360 365

Glu Thr Tyr Thr Trp Arg Ser Gln Asn Asp Thr Val Thr Pro Asp Val
 370 375 380

Trp Tyr Thr Ser Lys Pro Lys Glu Lys Leu Val Tyr Ala Ile Phe Leu
 385 390 395 400

Lys Trp Pro Thr Ser Gly Gln Leu Phe Leu Gly His Pro Lys Ala Ile
 405 410 415

Leu Gly Ala Thr Glu Val Lys Leu Leu Gly His Gly Gln Pro Leu Asn
 420 425 430

Trp Ile Ser Leu Glu Gln Asn Gly Ile Met Val Glu Leu Pro Gln Leu
 435 440 445

Thr Ile His Gln Met Pro Cys Lys Trp Gly Trp Ala Leu Ala Leu Thr
 450 455 460

Asn Val Ile
 465

<210> 196

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 196

tggtttgacc aggccaagtt cgg

23

<210> 197

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 197

ggattcatcc tcaaggaaga gcgg

24

<210> 198

<211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 198
 aacttgacgc atcagccact ctgc 24

<210> 199
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 199
 ttccgtgccc agcttcggta gcgagtgggt ctggtgggtat tggca 45

<210> 200
 <211> 2372
 <212> DNA
 <213> Homo sapiens

<400> 200
 agcagggaaa tccggatgtc tcggttatga agtggagcag tgagtgtgag cctcaacata 60
 gttccagaac tctccatccg gactagttat tgagcatctg cctctcatat caccagtggc 120
 catctgaggt gtttccctgg ctctgaagggt gtaggcacga tggccagggtg cttcagcctg 180
 gtgttgcttc tcacttccat ctggaccacg aggtcctctg tccaaggctc tttgcgtgca 240
 gaagagcttt ccatccagggt gtcattgcaga attatgggga tcacccttgt gagcaaaaag 300
 gcgaaccagc agctgaattt cacagaagct aaggaggcct gtaggctgct gggactaagt 360
 ttggccggca aggaccaagt tgaaacagcc ttgaaagcta gctttgaaac ttgcagctat 420
 ggctgggttg gagatggatt cgtggtcatt tctaggatta gcccaaacc ccaagtgtggg 480
 aaaaatgggg tgggtgtcct gatttggaag gttccagtga gccgacagtt tgcagcctat 540
 tgttacaact catctgatac ttggactaac tcgtgcattc cagaaattat caccaccaa 600
 gatcccatat tcaacactca aactgcaaca caaacaacag aatttattgt cagtgcagct 660
 acctactcgg tggcatcccc ttactctaca atacctgccc ctactactac tcctcctgct 720
 ccagcttcca cttctattcc acggagaaaa aaattgattt gtgtcacaga agtttttatg 780
 gaaactagca ccatgtctac agaaactgaa ccatttggtg aaaataaagc agcattcaag 840
 aatgaagctg ctgggttttg aggtgtcccc acggctctgc tagtgcttgc tctcctcttc 900
 tttggtgctg cagctgggtc tggattttgc tatgtcaaaa ggtatgtgaa ggccttccct 960
 tttcaaaaaga agaactcagca gaaggaaatg atcgaaacca aagtagtaaa ggaggagaag 1020
 gccaatgata gcaaccctaa tgaggaatca aagaaaactg ataaaaaccc agaagagtcc 1080
 aagagtccaa gcaaaaactac cgtgcgatgc ctggaagctg aagtttagat gagacagaaa 1140
 tgaggagaca cacctgaggc tggtttcttt catgctcctt accctgcccc agctggggaa 1200
 atcaaaaggg ccaagaagacc aaagaagaaa gtccaccctt ggttcctaac tggaaatcagc 1260
 tcaggactgc cattggacta tggagtgcac caaagagaat gcccttctcc ttattgtaac 1320
 cctgtctgga tctatctctc ctacctccaa agcttccac ggcctttcta gcctggctat 1380
 gtctaataa tatccactg ggagaaagga gttttgcaaa gtgcaaggac ctaaaacatc 1440

```

tcatcagtat ccagtggtaa aaaggcctcc tggctgtctg aggctagggtg gggtgaaagc 1500
caaggagtca ctgagaccaa ggctttctct actgattccg cagctcagac cctttcttca 1560
gctctgaaag agaaacacgt atcccacctg acatgtcctt ctgagcccgg taagagcaaa 1620
agaatggcag aaaagtttag cccctgaaag ccatggagat tctcataact tgagacctaa 1680
tctctgtaaa gctaaaataa agaaatagaa caaggctgag gatacgacag tacactgtca 1740
gcagggactg taaacacaga caggggtcaaa gtgttttctc tgaacacatt gagttggaat 1800
cactgttttag aacacacaca cttacttttt ctggtctcta ccactgctga tattttctct 1860
aggaaatata cttttacaag taacaaaaat aaaaactctt ataaatttct atttttatct 1920
gagttacaga aatgattact aaggaagatt actcagtaat ttgtttaaaa agtaataaaa 1980
ttcaacaaac atttgctgaa tagctactat atgtcaagtg ctgtgcaagg tattacactc 2040
tgtaattgaa tattattcct caaaaaattg cacatagtag aacgctatct ggggaagctat 2100
ttttttcagt tttgatattt ctagcttata tacttccaaa ctaattttta tttttgctga 2160
gactaatctt attcattttc tctaatatgg caaccattat aaccttaatt tattattaac 2220
atacctaaga agtacattgt tacctctata taccaaagca catttttaaaa gtgccattaa 2280
caaatgtatc actagccctc ctttttccaa caagaaggga ctgagagatg cagaaatatt 2340
tgtgacaaaa aattaaagca tttagaaaac tt 2372

```

<210> 201

<211> 322

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic protein

<400> 201

```

Met Ala Arg Cys Phe Ser Leu Val Leu Leu Leu Thr Ser Ile Trp Thr
  1             5             10             15

```

```

Thr Arg Leu Leu Val Gln Gly Ser Leu Arg Ala Glu Glu Leu Ser Ile
      20             25             30

```

```

Gln Val Ser Cys Arg Ile Met Gly Ile Thr Leu Val Ser Lys Lys Ala
      35             40             45

```

```

Asn Gln Gln Leu Asn Phe Thr Glu Ala Lys Glu Ala Cys Arg Leu Leu
      50             55             60

```

```

Gly Leu Ser Leu Ala Gly Lys Asp Gln Val Glu Thr Ala Leu Lys Ala
      65             70             75             80

```

```

Ser Phe Glu Thr Cys Ser Tyr Gly Trp Val Gly Asp Gly Phe Val Val
      85             90             95

```

```

Ile Ser Arg Ile Ser Pro Asn Pro Lys Cys Gly Lys Asn Gly Val Gly
      100            105            110

```

```

Val Leu Ile Trp Lys Val Pro Val Ser Arg Gln Phe Ala Ala Tyr Cys
      115            120            125

```

```

Tyr Asn Ser Ser Asp Thr Trp Thr Asn Ser Cys Ile Pro Glu Ile Ile
      130            135            140

```

Thr Thr Lys Asp Pro Ile Phe Asn Thr Gln Thr Ala Thr Gln Thr Thr
 145 150 155 160
 Glu Phe Ile Val Ser Asp Ser Thr Tyr Ser Val Ala Ser Pro Tyr Ser
 165 170 175
 Thr Ile Pro Ala Pro Thr Thr Thr Pro Pro Ala Pro Ala Ser Thr Ser
 180 185 190
 Ile Pro Arg Arg Lys Lys Leu Ile Cys Val Thr Glu Val Phe Met Glu
 195 200 205
 Thr Ser Thr Met Ser Thr Glu Thr Glu Pro Phe Val Glu Asn Lys Ala
 210 215 220
 Ala Phe Lys Asn Glu Ala Ala Gly Phe Gly Gly Val Pro Thr Ala Leu
 225 230 235 240
 Leu Val Leu Ala Leu Leu Phe Phe Gly Ala Ala Ala Gly Leu Gly Phe
 245 250 255
 Cys Tyr Val Lys Arg Tyr Val Lys Ala Phe Pro Phe Thr Asn Lys Asn
 260 265 270
 Gln Gln Lys Glu Met Ile Glu Thr Lys Val Val Lys Glu Glu Lys Ala
 275 280 285
 Asn Asp Ser Asn Pro Asn Glu Glu Ser Lys Lys Thr Asp Lys Asn Pro
 290 295 300
 Glu Glu Ser Lys Ser Pro Ser Lys Thr Thr Val Arg Cys Leu Glu Ala
 305 310 315 320
 Glu Val

<210> 202

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 202

gagctttcca tccaggtgtc atgc

24

<210> 203

<211> 22

<212> DNA

<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 203
 gtcagtgaca gtacctactc gg 22

<210> 204
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 204
 tggagcagga ggagtagtag tagg 24

<210> 205
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 205
 aggaggcctg taggctgctg ggactaagtt tggccggcaa ggaccaagtt 50

<210> 206
 <211> 1620
 <212> DNA
 <213> Homo sapiens

<220>
 <221> modified_base
 <222> (973)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (977)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (996)
 <223> a, t, c or g

<220>
 <221> modified_base

<222> (1003)

<223> a, t, c or g

<400> 206

```

agatggcgggt cttggcacct ctaattgctc tcgtgtattc ggtgccgcga ctttcacgat 60
ggctcgccca accttactac cttctgtcgg cctgtctctc tgctgccttc ctactcgtga 120
ggaaactgcc gccgctctgc caccgtctgc ccaccaacg cgaagacggt aaccctgttg 180
actttgactg gagagaagtg gagatcctga tgtttctcag tgccattgtg atgatgaaga 240
accgcagatc catcactgtg gagcaacata taggcaacat tttcatgttt agtaaagtgg 300
ccaacacaat tcttttcttc cgcttgataa ttcgcattgg cctactttac atcacactct 360
gcatagtgtt cctgatgacg tgcaaacccc ccctatatat gggccctgag tatatcaagt 420
acttcaatga taaaaccatt gatgaggaac tagaacggga caagagggtc acttggattg 480
tggagtctct tgccaattgg tctaattgact gccaatcatt tgcccctatc tatgtgacc 540
tctcccttaa atacaactgt acagggctaa attttgggaa ggtggatgtt ggacgctata 600
ctgatgttag tacgcggtac aaagtgaaca catcacccct caccaagcaa ctccctacc 660
tgatcctgtt ccaaggtggc aaggaggcaa tgcggcggcc acagattgac aagaaaggac 720
gggctgtctc atggaccttc tctgaggaga atgtgatccg agaatttaac ttaaattgagc 780
tataccagcg ggccaagaaa ctatcaaagg ctggagacaa tatccctgag gagcagcctg 840
tggcttcaac ccccaccaca gtgtcagatg gggaaaacaa gaaggataaa taagatcctc 900
actttggcag tgcttctctc cctgtcaatt ccaggctctt tccataacca caagcctgag 960
gctgcagcct ttnattnatg ttttcccttt ggctgngact ggntggggca gcatgcagct 1020
tctgatttta aagaggcatc tagggaattg tcaggcaccc tacaggaagg cctgccatgc 1080
tgtggccaac tgtttactg gagcaagaaa gagatctcat aggacggagg gggaaatgg 1140
ttccctcaa gcttgggtca gtgtgttaac tgcttatcag ctattcagac atctccatgg 1200
tttctccatg aaactctgtg gtttcatcat tccttcttag ttgacctgca cagcttgggt 1260
agacctagat ttaaccctaa ggtaagatgc tgggggtatag aacgctaaga attttcccc 1320
aaggactctt gcttccctaa gcccttctgg ctctgcttat ggtcttcatt aaaagtataa 1380
gcctaacttt gtcgctagtc ctaaggagaa acctttaacc acaaagtttt tatcattgaa 1440
gacaatattg aacaaccccc tattttgtgg ggattgagaa ggggtgaata gaggcttgag 1500
actttccttt gtgtggtagg acttggagga gaaatccct ggactttcac taacctctg 1560
acatactccc cacaccagtg tgatggcttt ccgtaataaa aagattggga tttcctttt 1620

```

<210> 207

<211> 296

<212> PRT

<213> Homo sapiens

<400> 207

Met Ala Val Leu Ala Pro Leu Ile Ala Leu Val Tyr Ser Val Pro Arg

1 5 10 15

Leu Ser Arg Trp Leu Ala Gln Pro Tyr Tyr Leu Leu Ser Ala Leu Leu

20 25 30

Ser Ala Ala Phe Leu Leu Val Arg Lys Leu Pro Pro Leu Cys His Gly

35 40 45

Leu Pro Thr Gln Arg Glu Asp Gly Asn Pro Cys Asp Phe Asp Trp Arg

50 55 60

Glu Val Glu Ile Leu Met Phe Leu Ser Ala Ile Val Met Met Lys Asn

65 70 75 80

Arg Arg Ser Ile Thr Val Glu Gln His Ile Gly Asn Ile Phe Met Phe
 85 90 95
 Ser Lys Val Ala Asn Thr Ile Leu Phe Phe Arg Leu Asp Ile Arg Met
 100 105 110
 Gly Leu Leu Tyr Ile Thr Leu Cys Ile Val Phe Leu Met Thr Cys Lys
 115 120 125
 Pro Pro Leu Tyr Met Gly Pro Glu Tyr Ile Lys Tyr Phe Asn Asp Lys
 130 135 140
 Thr Ile Asp Glu Glu Leu Glu Arg Asp Lys Arg Val Thr Trp Ile Val
 145 150 155 160
 Glu Phe Phe Ala Asn Trp Ser Asn Asp Cys Gln Ser Phe Ala Pro Ile
 165 170 175
 Tyr Ala Asp Leu Ser Leu Lys Tyr Asn Cys Thr Gly Leu Asn Phe Gly
 180 185 190
 Lys Val Asp Val Gly Arg Tyr Thr Asp Val Ser Thr Arg Tyr Lys Val
 195 200 205
 Ser Thr Ser Pro Leu Thr Lys Gln Leu Pro Thr Leu Ile Leu Phe Gln
 210 215 220
 Gly Gly Lys Glu Ala Met Arg Arg Pro Gln Ile Asp Lys Lys Gly Arg
 225 230 235 240
 Ala Val Ser Trp Thr Phe Ser Glu Glu Asn Val Ile Arg Glu Phe Asn
 245 250 255
 Leu Asn Glu Leu Tyr Gln Arg Ala Lys Lys Leu Ser Lys Ala Gly Asp
 260 265 270
 Asn Ile Pro Glu Glu Gln Pro Val Ala Ser Thr Pro Thr Thr Val Ser
 275 280 285
 Asp Gly Glu Asn Lys Lys Asp Lys
 290 295

<210> 208

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 208

gcttgatattcgcattgggcctac

<210> 209
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 209
 tggagacaat atccctgagg 20

<210> 210
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 210
 aacagttggc cacagcatgg cagg 24

<210> 211
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 211
 ccattgatga ggaactagaa cgggacaaga gggtcacttg gattgtggag 50

<210> 212
 <211> 1985
 <212> DNA
 <213> Homo sapiens

<400> 212
 ggacagctcg cggcccccca gagctctagc cgtcgaggag ctgcctgggg acgtttgccc 60
 tggggccccc gcttgccccg ggtcacccctg gcatgaggag atgggcctgt tgctcctggg 120
 cccattgctc ctgctgcccg gctcctacgg actgcccttc tacaacggct tctactactc 180
 caacagcgcc aacgaccaga acctaggcaa cggctcatggc aaagacctcc ttaatggagt 240
 gaagctggtg gtggagacac ccgaggagac cctgttcacc taccaagggg ccagtgtgat 300
 cctgccctgc cgctaccgct acgagccggc cctgggtctcc ccgcggcgtg tgcgtgtcaa 360
 atggtggaag ctgtcggaga acggggcccc agagaaggac gtgctggtgg ccatcgggct 420
 gaggcaccgc tcctttgggg actaccaagg ccgcgtgcac ctgcggcagg acaaagagca 480
 tgacgtctcg ctggagatcc aggatctgcg gctggaggac tatgggcgtt accgctgtga 540
 ggtcattgac gggctggagg atgaaagcgg tctggtggag ctggagctgc ggggtgtggg 600

```

ctttccttac cagtccccca acgggcgcta ccagttcaac ttccacgagg gccagcaggt 660
ctgtgcagag caggctgcgg tggtagcctc ctttgagcag ctcttccggg cctgggagga 720
gggcctggac tggtagaacg cgggctggct gcaggatgct acggtgcagt accccatcat 780
gttgccccgg cagccctgcg gtggcccagg cctggcacct ggcgtgcgaa gctacggccc 840
ccgccaccgc cgcctgcacc gctatgatgt attctgcttc gctactgccc tcaaggggcg 900
ggtgtactac ctggagcacc ctgagaagct gacgctgaca gaggcaaggg aggcctgcca 960
ggaagatgat gccacgatcg ccaaggtggg acagctcttt gccgcctgga agttccatgg 1020
cctggaccgc tgcgacgctg gctggctggc agatggcagc gtccgctacc ctgtggttca 1080
cccgcacctc aactgtgggc ccccagagcc tggggtcgga agctttggct tccccgacc 1140
gcagagccgc ttgtacggtg tttactgcta ccgccagcac taggacctgg ggccctcccc 1200
tgccgcattc cctcactggc tgtgtattta ttgagtgggt cgttttccct tgtgggttgg 1260
agccatttta actgttttta tacttctcaa tttaaatttt ctttaaacad tttttacta 1320
ttttttgtaa agcaaacaga acccaatgcc tccctttgct cctggatgcc ccactccagg 1380
aatcatgctt gctcccctgg gccatttgcg gttttgtggg cttctggagg gttccccgcc 1440
atccaggctg gtctccctcc ctttaaggagg ttggtgcccc gagtgggagg tggcctgtct 1500
agaatgccgc cgggagtcgc ggcatggtgg gcacagttct ccctgcccct cagcctgggg 1560
gaagaagagg gcctcggggg cctccggagc tgggcttttg gcctctcctg cccacctcta 1620
cttctctgtg aagccgctga cccagctctg cccactgagg ggctagggct ggaagccagt 1680
tctaggcttc caggcgaaat ctgagggaag gaagaaactc cctccccgt tccccctccc 1740
ctctcggttc caaagaatct gttttgttgt catttgtttc tctgttttc ctgtgtgggg 1800
aggggcccctc aggtgtgtgt actttggaca ataatgggtg ctatgactgc cttccgccaa 1860
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1920
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1980
aaaaaa                                           1985

```

```

<210> 213
<211> 360
<212> PRT
<213> Homo sapiens

```

```

<400> 213
Met Gly Leu Leu Leu Val Pro Leu Leu Leu Leu Pro Gly Ser Tyr
  1                      5                      10                      15

Gly Leu Pro Phe Tyr Asn Gly Phe Tyr Tyr Ser Asn Ser Ala Asn Asp
      20                      25                      30

Gln Asn Leu Gly Asn Gly His Gly Lys Asp Leu Leu Asn Gly Val Lys
      35                      40                      45

Leu Val Val Glu Thr Pro Glu Glu Thr Leu Phe Thr Tyr Gln Gly Ala
      50                      55                      60

Ser Val Ile Leu Pro Cys Arg Tyr Arg Tyr Glu Pro Ala Leu Val Ser
      65                      70                      75                      80

Pro Arg Arg Val Arg Val Lys Trp Trp Lys Leu Ser Glu Asn Gly Ala
      85                      90                      95

Pro Glu Lys Asp Val Leu Val Ala Ile Gly Leu Arg His Arg Ser Phe
      100                      105                      110

Gly Asp Tyr Gln Gly Arg Val His Leu Arg Gln Asp Lys Glu His Asp

```

| 115 | | | | | 120 | | | | | 125 | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Ser | Leu | Glu | Ile | Gln | Asp | Leu | Arg | Leu | Glu | Asp | Tyr | Gly | Arg | Tyr | |
| 130 | | | | | 135 | | | | | 140 | | | | | | |
| Arg | Cys | Glu | Val | Ile | Asp | Gly | Leu | Glu | Asp | Glu | Ser | Gly | Leu | Val | Glu | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Leu | Glu | Leu | Arg | Gly | Val | Val | Phe | Pro | Tyr | Gln | Ser | Pro | Asn | Gly | Arg | |
| 165 | | | | | 170 | | | | | 175 | | | | | | |
| Tyr | Gln | Phe | Asn | Phe | His | Glu | Gly | Gln | Gln | Val | Cys | Ala | Glu | Gln | Ala | |
| 180 | | | | | 185 | | | | | 190 | | | | | | |
| Ala | Val | Val | Ala | Ser | Phe | Glu | Gln | Leu | Phe | Arg | Ala | Trp | Glu | Glu | Gly | |
| 195 | | | | | 200 | | | | | 205 | | | | | | |
| Leu | Asp | Trp | Cys | Asn | Ala | Gly | Trp | Leu | Gln | Asp | Ala | Thr | Val | Gln | Tyr | |
| 210 | | | | | 215 | | | | | 220 | | | | | | |
| Pro | Ile | Met | Leu | Pro | Arg | Gln | Pro | Cys | Gly | Gly | Pro | Gly | Leu | Ala | Pro | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Val | Arg | Ser | Tyr | Gly | Pro | Arg | His | Arg | Arg | Leu | His | Arg | Tyr | Asp | |
| 245 | | | | | 250 | | | | | 255 | | | | | | |
| Val | Phe | Cys | Phe | Ala | Thr | Ala | Leu | Lys | Gly | Arg | Val | Tyr | Tyr | Leu | Glu | |
| 260 | | | | | 265 | | | | | 270 | | | | | | |
| His | Pro | Glu | Lys | Leu | Thr | Leu | Thr | Glu | Ala | Arg | Glu | Ala | Cys | Gln | Glu | |
| 275 | | | | | 280 | | | | | 285 | | | | | | |
| Asp | Asp | Ala | Thr | Ile | Ala | Lys | Val | Gly | Gln | Leu | Phe | Ala | Ala | Trp | Lys | |
| 290 | | | | | 295 | | | | | 300 | | | | | | |
| Phe | His | Gly | Leu | Asp | Arg | Cys | Asp | Ala | Gly | Trp | Leu | Ala | Asp | Gly | Ser | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| Val | Arg | Tyr | Pro | Val | Val | His | Pro | His | Pro | Asn | Cys | Gly | Pro | Pro | Glu | |
| 325 | | | | | 330 | | | | | 335 | | | | | | |
| Pro | Gly | Val | Arg | Ser | Phe | Gly | Phe | Pro | Asp | Pro | Gln | Ser | Arg | Leu | Tyr | |
| 340 | | | | | 345 | | | | | 350 | | | | | | |
| Gly | Val | Tyr | Cys | Tyr | Arg | Gln | His | | | | | | | | | |
| 355 | | | | | 360 | | | | | | | | | | | |

<210> 214

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 214
tgcttcgcta ctgccctc 18

<210> 215
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 215
ttcccttggtg ggttggag 18

<210> 216
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 216
agggctggaa gccagttc 18

<210> 217
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 217
agccagtgcg gaaatgcg 18

<210> 218
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 218
tgtccaaagt acacacacct gagg 24

<210> 219
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 219
 gatgccacga tcgccaaggt gggacagctc tttgccgcct ggaag 45

<210> 220
 <211> 1503
 <212> DNA
 <213> Homo sapiens

<400> 220
 ggagagcggg gcaagctgg ataacagggg accgatgatg tggcgaccat cagttctgct 60
 gcttctgttg ctactgaggc acggggccca ggggaagcca tcccagacg caggccctca 120
 tggccagggg aggggtgcacc aggcggcccc cctgagcgac gctcccatg atgacgcca 180
 cgggaacttc cagtacgacc atgaggcttt cctgggacgg gaagtggcca aggaattcga 240
 ccaactcacc ccagaggaaa gccaggcccc tctggggcgg atcgtggacc gcatggaccg 300
 cgcgggggac ggcgacggct ggggtgtcgt ggccgagctt cgcgcgtgga tcgcgcacac 360
 gcagcagcgg cacatacggg actcggtag cgcgcctgg gacacgtacg acacggaccg 420
 cgacgggct gtgggttggg aggagctgcg caacgccacc tatggccact acgcgcccgg 480
 tgaagaattt catgacgtgg aggatgcaga gacctacaaa aagatgctgg ctcgggacga 540
 gcggcgcttc cgggtggccg accaggatgg ggactcgatg gccactcgag aggagctgac 600
 agccttctctg caccgagag agttccctca catgcgggac atcgtgattg ctgaaacct 660
 ggaggacctg gacagaaaca aagatggcta tgtccaggtg gaggagtaca tcgcggatct 720
 gtactcagcc gagcctgggg aggaggagcc ggcgtgggtg cagacggaga ggcagcagtt 780
 ccgggacttc cgggatctga acaaggatgg gcacctggat gggagtgagg tgggcccactg 840
 ggtgctgccc cctgcccagg accagcccct ggtggaagcc aaccacctgc tgcacgagag 900
 cgacacggac aaggatgggc ggctgagcaa agcggaaatc ctgggttaatt ggaacatgtt 960
 tgtgggcagt caggccacca actatggcga ggacctgacc cggcaccacg atgagctgtg 1020
 agcaccgcgc acctgccaca gcctcagagg cccgcacaat gaccggagga ggggcccgtg 1080
 tggctctggc ccctccctgt ccaggccccg caggaggcag atgcagtccc aggcatactc 1140
 ctgcccctgg gctctcaggg accccctggg tcggcttctg tcctgtcac acccccaacc 1200
 ccaggagggg gctgtcatag tcccagagga taagcaatac ctatttctga ctgagtctcc 1260
 cagcccagac ccagggaccc ttggcccaa gctcagctct aagaaccgcc ccaaccctc 1320
 cagctccaaa tctgagctc caccacatag actgaaactc ccctggcccc agccctctcc 1380
 tgccctggcct ggccctgggac acctcctctc tgccaggagg caataaaagc cagcgcgggg 1440
 accttgaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1500
 aaa 1503

<210> 221
 <211> 328
 <212> PRT
 <213> Homo sapiens

<400> 221
 Met Met Trp Arg Pro Ser Val Leu Leu Leu Leu Leu Leu Arg His

| 1 | 5 | 10 | 15 |
|---|-----|-----|-----|
| Gly Ala Gln Gly Lys Pro Ser Pro Asp Ala Gly Pro His Gly Gln Gly | 20 | 25 | 30 |
| Arg Val His Gln Ala Ala Pro Leu Ser Asp Ala Pro His Asp Asp Ala | 35 | 40 | 45 |
| His Gly Asn Phe Gln Tyr Asp His Glu Ala Phe Leu Gly Arg Glu Val | 50 | 55 | 60 |
| Ala Lys Glu Phe Asp Gln Leu Thr Pro Glu Glu Ser Gln Ala Arg Leu | 65 | 70 | 75 |
| Gly Arg Ile Val Asp Arg Met Asp Arg Ala Gly Asp Gly Asp Gly Trp | 85 | 90 | 95 |
| Val Ser Leu Ala Glu Leu Arg Ala Trp Ile Ala His Thr Gln Gln Arg | 100 | 105 | 110 |
| His Ile Arg Asp Ser Val Ser Ala Ala Trp Asp Thr Tyr Asp Thr Asp | 115 | 120 | 125 |
| Arg Asp Gly Arg Val Gly Trp Glu Glu Leu Arg Asn Ala Thr Tyr Gly | 130 | 135 | 140 |
| His Tyr Ala Pro Gly Glu Glu Phe His Asp Val Glu Asp Ala Glu Thr | 145 | 150 | 155 |
| Tyr Lys Lys Met Leu Ala Arg Asp Glu Arg Arg Phe Arg Val Ala Asp | 165 | 170 | 175 |
| Gln Asp Gly Asp Ser Met Ala Thr Arg Glu Glu Leu Thr Ala Phe Leu | 180 | 185 | 190 |
| His Pro Glu Glu Phe Pro His Met Arg Asp Ile Val Ile Ala Glu Thr | 195 | 200 | 205 |
| Leu Glu Asp Leu Asp Arg Asn Lys Asp Gly Tyr Val Gln Val Glu Glu | 210 | 215 | 220 |
| Tyr Ile Ala Asp Leu Tyr Ser Ala Glu Pro Gly Glu Glu Glu Pro Ala | 225 | 230 | 235 |
| Trp Val Gln Thr Glu Arg Gln Gln Phe Arg Asp Phe Arg Asp Leu Asn | 245 | 250 | 255 |
| Lys Asp Gly His Leu Asp Gly Ser Glu Val Gly His Trp Val Leu Pro | 260 | 265 | 270 |
| Pro Ala Gln Asp Gln Pro Leu Val Glu Ala Asn His Leu Leu His Glu | 275 | 280 | 285 |

Ser Asp Thr Asp Lys Asp Gly Arg Leu Ser Lys Ala Glu Ile Leu Gly
 290 295 300

Asn Trp Asn Met Phe Val Gly Ser Gln Ala Thr Asn Tyr Gly Glu Asp
 305 310 315 320

Leu Thr Arg His His Asp Glu Leu
 325

<210> 222

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 222

cgcaggccct catggccagg

20

<210> 223

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 223

gaaatcctgg gtaattgg

18

<210> 224

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 224

gtgcgcggtg ctcacagctc atc

23

<210> 225

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 225

ccccctgag cgacgctccc ccatgatgac gccacggga actt

44

<210> 226

<211> 2403

<212> DNA

<213> Homo sapiens

<400> 226

```

ggggccttgc cttccgcact cgggcgcagc cgggtggatc tcgagcaggt ggcgagcccc 60
gggcggcggg cgcgggtgcg agggatccct gacgcctctg tccctgtttc tttgtcgctc 120
ccagcctgtc tgtcgtcggt ttggcgcccc cgcctccccg cgggtgcgggg ttgcacaccg 180
atcctgggct tcgctcgatt tgcgcgcgag gcgcctccca gacctagagg ggcgctggcc 240
tggagcagcg ggtcgtctgt gtccctctctc ctctgcgcgc cgcgcgggga tccgaagggt 300
gcggggctct gaggaggtga cgcgcggggc ctcccgcaac ctggccttgc ccgcattctc 360
cctctctccc aggtgtgagc agcctatcag tcaccatgtc cgcagcctgg atcccggtc 420
tcggcctcgg tgtgtgtctg ctgctgctgc cggggcccg cggcagcgag ggagccgctc 480
ccattgctat cacatgtttt accagaggct tggacatcag gaaagagaaa gcagatgtcc 540
tctgcccagg gggctgccct cttgaggaat tctctgtgta tgggaacata gtatatgctt 600
ctgtatcgag catatgtggg gctgctgtcc acaggggagt aatcagcaac tcagggggac 660
ctgtacgagt ctatagccta cctggtcgag aaaactattc ctacgtagat gccaatggca 720
tccagtctca aatgctttct agatggtctg cttctttcac agtaactaaa ggcaaaagta 780
gtacacagga ggccacagga caagcagtggt ccacagcaca tccaccaaca ggtaaacgac 840
taaagaaaac acccgagaag aaaactggca ataaagattg taaagcagac attgcatttc 900
tgattgatgg aagctttaat attgggcagc gccgatttaa tttacagaag aattttgttg 960
gaaaagtggc tctaattgtt ggaattggaa cagaaggacc acatgtgggc cttgttcaag 1020
ccagtgaaca tcccaaaata gaattttact tgaaaaactt tacatcagcc aaagatgttt 1080
tgtttgccat aaaggaagta ggtttcagag ggggtaattc caatacagga aaagccttga 1140
agcatactgc tcagaaattc ttcacggtag atgctggagt aagaaaaggg atcccccagg 1200
tggttggtgg atttattgat ggttggcctt ctgatgacat cgaggaagca ggcattgttg 1260
ccagagagtt tgggtgtcaat gtatttatag tttctgtggc caagcctatc cctgaagaac 1320
tggggatggg tcaggatgtc acatttgttg acaaggctgt ctgtcggaat aatggcttct 1380
tctcttacca catgccccac tggtttggca ccacaaaata cgtaaagcct ctggtacaga 1440
agctgtgcac tcatgaacaa atgatgtgca gcaagacctg ttataactca gtgaacattg 1500
cctttctaata tgatggctcc agcagtggtg gagatagcaa tttccgcctc atgcttgaat 1560
ttgtttccaa catagccaag acttttgaaa tctcggacat tggtgccaag atagctgctg 1620
tacagtttac ttatgatcag cgcacggagt tcagtttcac tgactatagc accaaagaga 1680
atgtcctagc tgtcatcaga aacatccgct atatgagtgg tggaaacagc actggtgatg 1740
ccatttcctt cactgttaga aatgtgtttg gccctataag ggagagcccc aacaagaact 1800
tcctagtaat tgtcacagat gggcagtcct atgatgatgt ccaaggccct gcagctgctg 1860
cacatgatgc aggaatcact atcttctctg ttggtgtggc ttgggcacct ctggatgacc 1920
tgaaagatat ggcttctaaa ccgaaggagt ctcacgcttt cttcacaaga gatttcacag 1980
gattagaacc aattgtttct gatgtcatca gaggcatttg tagagatttc ttagaatccc 2040
agcaataatg gtaacatttt gacaactgaa agaaaaagta caaggggatc cagtgtgtaa 2100
attgtattct cataatactg aaatgcttta gcatactaga atcagatata aaactattaa 2160
gtatgtcaac agccatttag gcaaataagc actcctttta agccgctgcc ttctggttac 2220
aatttacagt gtactttggt aaaaacactg ctgaggcttc ataactatgg ctcttagaaa 2280
ctcaggaaag aggagataat gtggattaaa accttaagag ttctaaccat gcctactaaa 2340
tgtacagata tgcaaattcc atagctcaat aaaagaatct gatacttaga ccaaaaaaaaa 2400
aaa
2403

```

<210> 227

<213> Homo sapiens

Met Ser Ala Ala Trp Ile Pro Ala Leu Gly Leu Gly Val Cys Leu Leu
1 5 10 15

Thr Cys Phe Thr Arg Gly Leu Asp Ile Arg Lys Glu Lys Ala Asp Val
35 40 45

Ile Val Tyr Ala Ser Val Ser Ser Ile Cys Gly Ala Ala Val His Arg
65 70 75 80

Gly Arg Glu Asn Tyr Ser Ser Val Asp Ala Asn Gly Ile Gln Ser Gln
100 105 110

Ser Thr Gln Glu Ala Thr Gly Gln Ala Val Ser Thr Ala His Pro Pro
130 135 140

Asp Cys Lys Ala Asp Ile Ala Phe Leu Ile Asp Gly Ser Phe Asn Ile
165 170 175

Leu Met Leu Gly Ile Gly Thr Glu Gly Pro His Val Gly Leu Val Gln
195 200 205

Ala Lys Asp Val Leu Phe Ala Ile Lys Glu Val Gly Phe Arg Gly Gly
225 230 235 240

Asn Ser Asn Thr Gly Lys Ala Leu Lys His Thr Ala Gln Lys Phe Phe
245 250 255

Thr Val Asp Ala Gly Val Arg Lys Gly Ile Pro Lys Val Val Val Val
 260 265 270
 Phe Ile Asp Gly Trp Pro Ser Asp Asp Ile Glu Glu Ala Gly Ile Val
 275 280 285
 Ala Arg Glu Phe Gly Val Asn Val Phe Ile Val Ser Val Ala Lys Pro
 290 295 300
 Ile Pro Glu Glu Leu Gly Met Val Gln Asp Val Thr Phe Val Asp Lys
 305 310 315 320
 Ala Val Cys Arg Asn Asn Gly Phe Phe Ser Tyr His Met Pro Asn Trp
 325 330 335
 Phe Gly Thr Thr Lys Tyr Val Lys Pro Leu Val Gln Lys Leu Cys Thr
 340 345 350
 His Glu Gln Met Met Cys Ser Lys Thr Cys Tyr Asn Ser Val Asn Ile
 355 360 365
 Ala Phe Leu Ile Asp Gly Ser Ser Ser Val Gly Asp Ser Asn Phe Arg
 370 375 380
 Leu Met Leu Glu Phe Val Ser Asn Ile Ala Lys Thr Phe Glu Ile Ser
 385 390 395 400
 Asp Ile Gly Ala Lys Ile Ala Ala Val Gln Phe Thr Tyr Asp Gln Arg
 405 410 415
 Thr Glu Phe Ser Phe Thr Asp Tyr Ser Thr Lys Glu Asn Val Leu Ala
 420 425 430
 Val Ile Arg Asn Ile Arg Tyr Met Ser Gly Gly Thr Ala Thr Gly Asp
 435 440 445
 Ala Ile Ser Phe Thr Val Arg Asn Val Phe Gly Pro Ile Arg Glu Ser
 450 455 460
 Pro Asn Lys Asn Phe Leu Val Ile Val Thr Asp Gly Gln Ser Tyr Asp
 465 470 475 480
 Asp Val Gln Gly Pro Ala Ala Ala Ala His Asp Ala Gly Ile Thr Ile
 485 490 495
 Phe Ser Val Gly Val Ala Trp Ala Pro Leu Asp Asp Leu Lys Asp Met
 500 505 510
 Ala Ser Lys Pro Lys Glu Ser His Ala Phe Phe Thr Arg Glu Phe Thr
 515 520 525
 Gly Leu Glu Pro Ile Val Ser Asp Val Ile Arg Gly Ile Cys Arg Asp
 530 535 540

Phe Leu Glu Ser Gln Gln
545 550

<210> 228
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 228
tggtctcgca caccgatc 18

<210> 229
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 229
ctgctgtcca caggggag 18

<210> 230
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 230
ccttgaagca tactgctc 18

<210> 231
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 231
gagatagcaa tttccgcc 18

<210> 232

<211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 232
 ttcctcaaga gggcagcc 18

<210> 233
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 233
 cttggcacca atgtccgaga tttc 24

<210> 234
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 234
 gctctgagga aggtgacgcg cggggcctcc gaacccttgg ccttg 45

<210> 235
 <211> 2586
 <212> DNA
 <213> Homo sapiens

<400> 235
 cgccgcgctc ccgcacccgc ggcccgccca ccgcgcccgt cccgcatctg caccgcgagc 60
 ccggcgccct ccggcgccga gcgagcagat ccagtccggc ccgcagcgca actcgggtcca 120
 gtcggggcgcg cggtctcgccg cgcagagcgg agatgcagcg gcttggggcc accctgctgt 180
 gcttctgtct ggccggcgccg gtcccccagc ccccgccgcc cgctccgacg gcgacctcgg 240
 ctccagtcac gcccgcccg gctctcagct acccgcagga ggaggccacc ctcaatgaga 300
 tggtccgcga ggttgaggaa ctgatggagg acacgcagca caaattgcgc agcgcgggtgg 360
 aagagatgga ggcagaagaa gctgctgcta aagcatcatc agaagtgaac ctggcaaaact 420
 tacctcccag ctatcacaaat gagaccaaca cagacacgaa ggttggaat aataccatcc 480
 atgtgcaccg agaaattcac aagataacca acaaccagac tggacaaatg gtcttttcag 540
 agacagttat cacatctgtg ggagacgaag aaggcagaag gagccacgag tgcacatcag 600
 acgaggactg tgggcccagc atgtactgcc agtttgccag cttccagtac acctgccagc 660
 catgccgggg ccagaggatg ctctgcaccc gggacagtga gtgctgtgga gaccagctgt 720

```

gtgtctggggg tcaactgcacc aaaatggcca ccaggggcag caatgggacc atctgtgaca 780
accagagggga ctgccagccg gggctgtgct gtgccttcca gagaggcctg ctgttccctg 840
tgtgcacacc cctgcccgtg gagggcgagc tttgccatga ccccgccagc cggcttcttg 900
acctcatcac ctgggagcta gagcctgatg gagccttgga ccgatgccct tgtgccagtg 960
gcctcctctg ccagccccac agccacagcc tgggtgtatgt gtgcaagccg accttcgtgg 1020
ggagccgtga ccaagatggg gagatcctgc tgcccagaga ggtccccgat gagtatgaag 1080
ttggcagctt catggaggag gtgcgccagg agctggagga cctggagagg agcctgactg 1140
aagagatggc gctggggggag cctgcggtg cgcgcgctgc actgctggga ggggaagaga 1200
tttagatctg gaccaggctg tgggtagatg tgcaatagaa atagctaatt tatttcccca 1260
gggtgtgtgt ttaggcgtgg gctgaccagg cttcttccca catcttcttc ccagtaagtt 1320
tccctctctg cttgacagca tgagggtgtt tgcatttgtt cagctccccc aggctgttct 1380
ccaggcttca cagtctggtg cttgggagag tcaggcaggg ttaaactgca ggagcagttt 1440
gccacccttg tccagattat tggtctgttt gcctctacca gttggcagac agccgtttgt 1500
tctacatggc tttgataatt gtttgagggg aggagatgga aacaatgtgg agtctccctc 1560
tgattggttt tggggaaatg tggagaagag tgccctgctt tgcaaacatc aacctggcaa 1620
aaatgcaaca aatgaatttt ccacgcagtt ctttccatgg gcataggtaa gctgtgcctt 1680
cagctgttgc agatgaaatg ttctgttcac cctgcattac atgtgtttat tcatccagca 1740
gtgttgctca gtcctacct ctgtgccagg gcagcatttt catatccaag atcaattccc 1800
tctctcagca cagcctgggg aggggggtcat tgttctcttc gtccatcagg gatctcagag 1860
gctcagagac tgcaagctgc ttgcccaggt cacacagcta gtgaagacca gagcagtttc 1920
atctggttgt gactctaagc tcagtgtctt ctccactacc ccacaccagc cttggtgcca 1980
ccaaaagtgc tccccaaaag gaaggagaat gggatttttc ttgaggcatg cacatctgga 2040
attaaggtca aactaattct cacatccctc taaaagtaaa ctactgttag gaacagcagt 2100
gttctcacag tgtggggcag ccgtccttct aatgaagaca atgatattga cactgtccct 2160
ctttggcagt tgcattagta actttgaaaag gtatatgact gagcgtagca tacagggttaa 2220
cctgcagaaa cagtacttag gtaattgtag ggcgaggatt ataaatgaaa tttgcaaaat 2280
cacttagcag caactgaaga caattatcaa ccacgtggag aaaatcaaac cgagcagggc 2340
tgtgtgaaac atggttgtaa tatgcgactg cgaacactga actctacgcc actccacaaa 2400
tgatgttttc aggtgtcatg gactgttgcc accatgtatt catccagagt tcttaaagtt 2460
taaagttgca catgattgta taagcatgct ttctttgagt tttaaattat gtataaacat 2520
aagttgcatt tagaaatcaa gcataaatca cttcaactgc aaaaaaaaaa aaaaaaaaaa 2580
aaaaaa

```

<210> 236

<211> 350

<212> PRT

<213> Homo sapiens

<400> 236

```

Met Gln Arg Leu Gly Ala Thr Leu Leu Cys Leu Leu Leu Ala Ala Ala
  1                      5                      10                      15

```

```

Val Pro Thr Ala Pro Ala Pro Ala Pro Thr Ala Thr Ser Ala Pro Val
                20                      25                      30

```

```

Lys Pro Gly Pro Ala Leu Ser Tyr Pro Gln Glu Glu Ala Thr Leu Asn
                35                      40                      45

```

```

Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys
    50                      55                      60

```

```

Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu Glu Ala Ala Ala Lys
    65                      70                      75                      80

```

Ala Ser Ser Glu Val Asn Leu Ala Asn Leu Pro Pro Ser Tyr His Asn
85 90 95

Glu Thr Asn Thr Asp Thr Lys Val Gly Asn Asn Thr Ile His Val His
100 105 110

Arg Glu Ile His Lys Ile Thr Asn Asn Gln Thr Gly Gln Met Val Phe
115 120 125

Ser Glu Thr Val Ile Thr Ser Val Gly Asp Glu Glu Gly Arg Arg Ser
130 135 140

His Glu Cys Ile Ile Asp Glu Asp Cys Gly Pro Ser Met Tyr Cys Gln
145 150 155 160

Phe Ala Ser Phe Gln Tyr Thr Cys Gln Pro Cys Arg Gly Gln Arg Met
165 170 175

Leu Cys Thr Arg Asp Ser Glu Cys Cys Gly Asp Gln Leu Cys Val Trp
180 185 190

Gly His Cys Thr Lys Met Ala Thr Arg Gly Ser Asn Gly Thr Ile Cys
195 200 205

Asp Asn Gln Arg Asp Cys Gln Pro Gly Leu Cys Cys Ala Phe Gln Arg
210 215 220

Gly Leu Leu Phe Pro Val Cys Thr Pro Leu Pro Val Glu Gly Glu Leu
225 230 235 240

Cys His Asp Pro Ala Ser Arg Leu Leu Asp Leu Ile Thr Trp Glu Leu
245 250 255

Glu Pro Asp Gly Ala Leu Asp Arg Cys Pro Cys Ala Ser Gly Leu Leu
260 265 270

Cys Gln Pro His Ser His Ser Leu Val Tyr Val Cys Lys Pro Thr Phe
275 280 285

Val Gly Ser Arg Asp Gln Asp Gly Glu Ile Leu Leu Pro Arg Glu Val
290 295 300

Pro Asp Glu Tyr Glu Val Gly Ser Phe Met Glu Glu Val Arg Gln Glu
305 310 315 320

Leu Glu Asp Leu Glu Arg Ser Leu Thr Glu Glu Met Ala Leu Gly Glu
325 330 335

Pro Ala Ala Ala Ala Ala Ala Leu Leu Gly Gly Glu Glu Ile
340 345 350

<210> 237

<211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 237
 ggagctgcac cccttgc 17

<210> 238
 <211> 49
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 238
 ggaggactgt gccacatga gagactcttc aaaccaagg caaaattgg 49

<210> 239
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 239
 gcagagcggg gatgcagcgg ctg 24

<210> 240
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 240
 ttggcagctt catggagg 18

<210> 241
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 241
 cctgggcaaa aatgcaac 18

<210> 242
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 242
 ctccagctcc tggcgcacct cctc

24

<210> 243
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 243
 ggctctcagc taccgcgcag gagcgaggcc accctcaatg agatg

45

<210> 244
 <211> 3679
 <212> DNA
 <213> Homo Sapien

<400> 244
 aaggaggctg ggaggaaaga ggtaagaaag gttagagaac ctacctcaca 50
 tctctctggg ctcagaagga ctctgaagat aacaataatt tcagcccatc 100
 cactctcctt ccctcccaaa cacacatgtg catgtacaca cacacataca 150
 cacacataca ccttcctctc cttcactgaa gactcacagt cactcactct 200
 gtgagcaggt catagaaaag gacactaaag ccttaaggac aggcttgccc 250
 attacctctg cagctccttt ggcttggtga gtcaaaaaac atgggagggg 300
 ccaggcacgg tgactcacac ctgtaatccc agcatttttg gagaccgagg 350
 tgagcagatc acttgaggtc aggagttcga gaccagcctg gccaacatgg 400
 agaaaccccc atctctacta aaaatacaaa aattagccag gagtgggtggc 450
 aggtgcctgt aatcccagct actcaggtgg ctgagccagg agaatcgctt 500
 gaatccagga ggcggaggat gcagtcagct gagtgcaccg ctgcactcca 550
 gcctgggtga cagaatgaga ctctgtctca aacaaacaaa cacgggagga 600

ggggtagata ctgcttctct gcaacctcct taactctgca tctcttctt 650
ccagggctgc ccctgatggg gcctggcaat gactgagcag gccagcccc 700
agaggacaag gaagagaagg catattgagg agggcaagaa gtgacgcccg 750
gtgtagaatg actgccctgg gaggggtggtt ccttgggccc tggcaggggt 800
gctgaccctt accctgcaaa acacaaagag caggactcca gactctcctt 850
gtgaatggtc ccctgccctg cagctccacc atgaggettcc tctgtggcccc 900
actcttgcta gcttgggtgg ctggtgccac tgccactgtg cccgtggtac 950
cctggcatgt tccctgcccc cctcagtgtg cctgccagat ccggccctgg 1000
tatacgcccc gctcgtccta ccgcgaggct accactgtgg actgcaatga 1050
cctattcctg acggcagtcc ccccggcact ccccgcaggc acacagacct 1100
tgctcctgca gagcaacagc attgtccgtg tggaccagag tgagctgggc 1150
tacctggcca atctcacaga gctggacctg tcccagaaca gcttttcgga 1200
tgcccagac tgtgatttcc atgccctgcc ccagctgctg agcctgcacc 1250
tagaggagaa ccagctgacc cggctggagg accacagctt tgcagggtg 1300
gccagcctac aggaactcta tctcaaccac aaccagctct accgcatcgc 1350
ccccagggcc ttttctggcc tcagcaactt gctgcggctg cacctcaact 1400
ccaacctcct gagggccatt gacagccgtt ggtttgaaat gctgccaac 1450
ttggagatac tcatgattgg cggcaacaag gtagatgcca tcttgacat 1500
gaacttccgg cccctggcca acctgcgtag cctggtgcta gcaggcatga 1550
acctgcggga gatctccgac tatgccctgg aggggtgca aagcctggag 1600
agcctctcct tctatgaaa ccagctggcc cgggtgcca ggccggcact 1650
ggaacaggtg cccgggctca agttcctaga cctcaacaag aaccgctcc 1700
agcgggtagg gccgggggac tttgccaaca tgctgcacct taaggagctg 1750
ggactgaaca acatggagga gctggtctcc atcgacaagt ttgcctggt 1800
gaacctcccc gagctgacca agctggacat caccaataac ccacggctgt 1850
ccttcacca ccccgcgcc ttccaccacc tgcccagat ggagaccctc 1900
atgctcaaca acaacgctct cagtgccttg caccagcaga cgggtggagt 1950

| | | | | | |
|------------|-------------|------------|-------------|-------------|------|
| cctgccaac | ctgcaggagg | taggtctcca | cggcaacccc | atccgctgtg | 2000 |
| actgtgtcat | ccgctgggcc | aatgccacgg | gcacccgtgt | ccgcttcac | 2050 |
| gagccgaat | ccaccctgtg | tgcggagcct | ccggacctcc | agcgccccc | 2100 |
| ggtccgtgag | gtgcccttcc | gggagatgac | ggaccactgt | ttgccccca | 2150 |
| tctccccacg | aagcttcccc | ccaagcctcc | aggtagccag | tggagagagc | 2200 |
| atggtgctgc | attgccgggc | actggccgaa | cccgaacccg | agatctactg | 2250 |
| ggtcactcca | gctgggcttc | gactgacacc | tgcccatgca | ggcaggagggt | 2300 |
| accgggtgta | ccccgagggg | accctggagc | tgcggaggggt | gacagcagaa | 2350 |
| gaggcagggc | tatacacctg | tgtggcccag | aacctgggtg | gggctgacac | 2400 |
| taagacgggt | agtgtgggtg | tgggccgtgc | tctcctccag | ccaggcaggg | 2450 |
| acgaaggaca | ggggctggag | ctccgggtgc | aggagaccca | cccctatcac | 2500 |
| atcctgctat | cttgggtcac | cccacccaac | acagtgtcca | ccaacctcac | 2550 |
| ctggtccagt | gcctcctccc | tccggggcca | ggggggccaca | gctctggccc | 2600 |
| gcctgcctcg | gggaaccac | agctacaaca | ttaccgcct | ccttcaggcc | 2650 |
| acggagtact | gggcctgcct | gcaagtggcc | tttgctgatg | cccacacca | 2700 |
| gttggcttgt | gtatgggcca | ggaccaaaga | ggccacttct | tgccacagag | 2750 |
| ccttagggga | tcgctcctggg | ctcattgcca | tcctggctct | cgctgtcctt | 2800 |
| ctcctggcag | ctgggctagc | ggcccacctt | ggcacaggcc | aaccagga | 2850 |
| gggtgtgggt | gggaggcggc | ctctccctcc | agcctgggct | ttctggggct | 2900 |
| ggagtcccc | ttctgtccgg | gttgtgtctg | ctccctcgt | cctgccctgg | 2950 |
| aatccaggga | ggaagctgcc | cagatcctca | gaaggggaga | cactgttgcc | 3000 |
| accattgtct | caaaattctt | gaagctcagc | ctgttctcag | cagtagagaa | 3050 |
| atcactagga | ctacttttta | ccaaaagaga | agcagtctgg | gccagatgcc | 3100 |
| ctgccaggaa | agggacatgg | accacgtgc | ttgaggcctg | gcagctgggc | 3150 |
| caagacagat | ggggctttgt | ggccctgggg | gtgcttctgc | agccttgaaa | 3200 |
| aagttgccct | tacctcctag | ggtcacctct | gctgccattc | tgaggaacat | 3250 |

ctccaaggaa caggagggac tttggctaga gcctcctgcc tccccatctt 3300
ctctctgccc agaggctcct gggcctggct tggctgtccc ctacctgtgt 3350
ccccgggctg cacccttcc tcttctcttt ctctgtacag tctcagttgc 3400
ttgtctttgt gcctcctggg caagggctga aggaggccac tccatctcac 3450
ctcggggggc tgccctcaat gtgggagtga cccagccag atctgaagga 3500
catttgggag agggatgccc aggaacgect catctcagca gcctgggctc 3550
ggcattccga agctgacttt ctataggcaa tttgtacct ttgtggagaa 3600
atgtgtcacc tcccccaacc cgattcactc ttttctcctg ttttgtaaaa 3650
aataaaaata aataataaca ataaaaaaa 3679

<210> 245

<211> 713

<212> PRT

<213> Homo Sapien

<400> 245

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Leu | Val | Ala | Pro | Leu | Leu | Leu | Ala | Trp | Val | Ala | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Thr | Ala | Thr | Val | Pro | Val | Val | Pro | Trp | His | Val | Pro | Cys | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Gln | Cys | Ala | Cys | Gln | Ile | Arg | Pro | Trp | Tyr | Thr | Pro | Arg | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ser | Tyr | Arg | Glu | Ala | Thr | Thr | Val | Asp | Cys | Asn | Asp | Leu | Phe | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Thr | Ala | Val | Pro | Pro | Ala | Leu | Pro | Ala | Gly | Thr | Gln | Thr | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Gln | Ser | Asn | Ser | Ile | Val | Arg | Val | Asp | Gln | Ser | Glu | Leu | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Tyr | Leu | Ala | Asn | Leu | Thr | Glu | Leu | Asp | Leu | Ser | Gln | Asn | Ser | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Asp | Ala | Arg | Asp | Cys | Asp | Phe | His | Ala | Leu | Pro | Gln | Leu | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Leu | His | Leu | Glu | Glu | Asn | Gln | Leu | Thr | Arg | Leu | Glu | Asp | His |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Phe | Ala | Gly | Leu | Ala | Ser | Leu | Gln | Glu | Leu | Tyr | Leu | Asn | His |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | |
|---------------------|-----------------|-------------------------|
| Asn Gln Leu Tyr Arg | Ile Ala Pro Arg | Ala Phe Ser Gly Leu Ser |
| 155 | 160 | 165 |
| Asn Leu Leu Arg Leu | His Leu Asn Ser | Asn Leu Leu Arg Ala Ile |
| 170 | 175 | 180 |
| Asp Ser Arg Trp Phe | Glu Met Leu Pro | Asn Leu Glu Ile Leu Met |
| 185 | 190 | 195 |
| Ile Gly Gly Asn Lys | Val Asp Ala Ile | Leu Asp Met Asn Phe Arg |
| 200 | 205 | 210 |
| Pro Leu Ala Asn Leu | Arg Ser Leu Val | Leu Ala Gly Met Asn Leu |
| 215 | 220 | 225 |
| Arg Glu Ile Ser Asp | Tyr Ala Leu Glu | Gly Leu Gln Ser Leu Glu |
| 230 | 235 | 240 |
| Ser Leu Ser Phe Tyr | Asp Asn Gln Leu | Ala Arg Val Pro Arg Arg |
| 245 | 250 | 255 |
| Ala Leu Glu Gln Val | Pro Gly Leu Lys | Phe Leu Asp Leu Asn Lys |
| 260 | 265 | 270 |
| Asn Pro Leu Gln Arg | Val Gly Pro Gly | Asp Phe Ala Asn Met Leu |
| 275 | 280 | 285 |
| His Leu Lys Glu Leu | Gly Leu Asn Asn | Met Glu Glu Leu Val Ser |
| 290 | 295 | 300 |
| Ile Asp Lys Phe Ala | Leu Val Asn Leu | Pro Glu Leu Thr Lys Leu |
| 305 | 310 | 315 |
| Asp Ile Thr Asn Asn | Pro Arg Leu Ser | Phe Ile His Pro Arg Ala |
| 320 | 325 | 330 |
| Phe His His Leu Pro | Gln Met Glu Thr | Leu Met Leu Asn Asn Asn |
| 335 | 340 | 345 |
| Ala Leu Ser Ala Leu | His Gln Gln Thr | Val Glu Ser Leu Pro Asn |
| 350 | 355 | 360 |
| Leu Gln Glu Val Gly | Leu His Gly Asn | Pro Ile Arg Cys Asp Cys |
| 365 | 370 | 375 |
| Val Ile Arg Trp Ala | Asn Ala Thr Gly | Thr Arg Val Arg Phe Ile |
| 380 | 385 | 390 |
| Glu Pro Gln Ser Thr | Leu Cys Ala Glu | Pro Pro Asp Leu Gln Arg |
| 395 | 400 | 405 |
| Leu Pro Val Arg Glu | Val Pro Phe Arg | Glu Met Thr Asp His Cys |

| 410 | | | | | | | | | | 415 | | | | | 420 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Leu | Pro | Leu | Ile | Ser | Pro | Arg | Ser | Phe | Pro | Pro | Ser | Leu | Gln | Val | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Ala | Ser | Gly | Glu | Ser | Met | Val | Leu | His | Cys | Arg | Ala | Leu | Ala | Glu | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Pro | Glu | Pro | Glu | Ile | Tyr | Trp | Val | Thr | Pro | Ala | Gly | Leu | Arg | Leu | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Thr | Pro | Ala | His | Ala | Gly | Arg | Arg | Tyr | Arg | Val | Tyr | Pro | Glu | Gly | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Thr | Leu | Glu | Leu | Arg | Arg | Val | Thr | Ala | Glu | Glu | Ala | Gly | Leu | Tyr | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Thr | Cys | Val | Ala | Gln | Asn | Leu | Val | Gly | Ala | Asp | Thr | Lys | Thr | Val | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Ser | Val | Val | Val | Gly | Arg | Ala | Leu | Leu | Gln | Pro | Gly | Arg | Asp | Glu | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Gly | Gln | Gly | Leu | Glu | Leu | Arg | Val | Gln | Glu | Thr | His | Pro | Tyr | His | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Ile | Leu | Leu | Ser | Trp | Val | Thr | Pro | Pro | Asn | Thr | Val | Ser | Thr | Asn | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Leu | Thr | Trp | Ser | Ser | Ala | Ser | Ser | Leu | Arg | Gly | Gln | Gly | Ala | Thr | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Ala | Leu | Ala | Arg | Leu | Pro | Arg | Gly | Thr | His | Ser | Tyr | Asn | Ile | Thr | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Arg | Leu | Leu | Gln | Ala | Thr | Glu | Tyr | Trp | Ala | Cys | Leu | Gln | Val | Ala | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Phe | Ala | Asp | Ala | His | Thr | Gln | Leu | Ala | Cys | Val | Trp | Ala | Arg | Thr | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Lys | Glu | Ala | Thr | Ser | Cys | His | Arg | Ala | Leu | Gly | Asp | Arg | Pro | Gly | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Leu | Ile | Ala | Ile | Leu | Ala | Leu | Ala | Val | Leu | Leu | Leu | Ala | Ala | Gly | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Leu | Ala | Ala | His | Leu | Gly | Thr | Gly | Gln | Pro | Arg | Lys | Gly | Val | Gly | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Gly | Arg | Arg | Pro | Leu | Pro | Pro | Ala | Trp | Ala | Phe | Trp | Gly | Trp | Ser | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |

Ala Pro Ser Val Arg Val Val Ser Ala Pro Leu Val Leu Pro Trp
 680 685 690

Asn Pro Gly Arg Lys Leu Pro Arg Ser Ser Glu Gly Glu Thr Leu
 695 700 705

Leu Pro Pro Leu Ser Gln Asn Ser
 710

<210> 246

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 246

aacaaggtaa gatgccatcc tg 22

<210> 247

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 247

aaacttgctg atggagacca gctc 24

<210> 248

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 248

aggggctgca aagcctggag agcctctcct tctatgacaa ccagc 45

<210> 249

<211> 3401

<212> DNA

<213> Homo Sapien

<400> 249

gcaagccaag gcgctgtttg agaaggtgaa gaagttccgg acccatgtgg 50

aggaggggga cattgtgtac cgctctaca tgcggcagac catcatcaag 100

gtgatcaagt tcctctcat catctgtac accgtctact acgtgcacaa 150

[illegible]

acgctccctc cggagctctt ccagtgcggg aagctgcggg cctgcacct 1500
gggcaacaac gtgctgcagt cactgccctc caggggtgggc gagctgacca 1550
acctgacgca gatcgagctg cggggcaacc ggctggagtg cctgcctgtg 1600
gagctgggcg agtgcccact gctcaagcgc agcggccttg tggaggagga 1650
ggacctgttc aacacactgc cccccgaggt gaaggagcgg ctgtggaggg 1700
ctgacaagga gcaggcctga gcgaggccgg cccagcacag caagcagcag 1750
gaccgctgcc cagtcctcag gcccgagggg gcaggcctag cttctcccag 1800
aactcccgga cagccaggac agcctcgcgg ctgggcagga gcctggggcc 1850
gcttgtgagt caggccagag cgagaggaca gtatctgtgg ggctggcccc 1900
ttttctccct ctgagactca cgtccccag ggcaagtgt tgtggaggag 1950
agcaagtctc aagagcgcag tatttgata atcagggctc cctccctgga 2000
ggccagctct gccccagggg ctgagctgcc accagaggtc ctgggaccct 2050
cactttagtt cttggtatth atttttctcc atctcccacc tccttcatcc 2100
agataactta tacattccca agaaagttca gccagatgg aaggtgttca 2150
gggaaaggtg ggctgccttt tccccttgtc cttatttagc gatgccgccg 2200
ggcatttaac acccacctgg acttcagcag agtgggccgg ggcgaaccag 2250
ccatgggacg gtcaccacgc agtgccgggc tgggctctgc ggtgcgggcc 2300
acgggagagc aggcctccag ctggaaaggc caggcctgga gcttgccctc 2350
tcagtttttg tggcagtttt agttttttgt tttttttttt tttaatcaaa 2400
aaacaatttt ttttaaaaaa aagctttgaa aatggatggg ttgggtatta 2450
aaaagaaaaa aaaaacttaa aaaaaaaaag acactaacgg ccagtgagtt 2500
ggagtctcag ggcagggtgg cagtttccct tgagcaaagc agccagacgt 2550
tgaactgtgt ttcttttccc tggggcgcagg gtgcagggtg tcttccggat 2600
ctggtgtgac cttgggtccag gagtctctatt tgttcctggg gagggaggtt 2650
tttttgtttg ttttttgggt ttttttgggt tcttggtttt tttctctcc 2700
atgtgtcttg gcaggcactc atttctgtgg ctgtcgcca gagggaatgt 2750
tctggagctg ccaaggaggg aggagactcg ggttggttaa tccccggatg 2800

aacggtgctc cattcgacc tccccctctc gtgcctgccc tgccctctcca 2850
 cgcacagtgt taaggagcca agaggagcca cttcgcccag actttgtttc 2900
 cccacctcct ggggcatggg tgtgtccagt gccaccgctg gcctccgctg 2950
 cttccatcag ccctgtcgcc acctggctct tcatgaagag cagacactta 3000
 gaggttggtc gggaatgggg aggtcgcccc tgggagggca ggcgttggtt 3050
 ccaagccggt tcccgctcct ggcgctgga gtgcacacag cccagtcggc 3100
 acctggtggc tggaagccaa cctgctttag atcactcggg tccccacctt 3150
 agaagggctc cgccttaga tcaatcacgt ggacactaag gcacgtttta 3200
 gagtctcttg tottaatgat tatgtccatc cgtctgtccg tccatttgtg 3250
 ttttctcgct cgtgtcattg gatataatcc tcagaaataa tgcacactag 3300
 cctctgacaa ccatgaagca aaaatccgtt acatgtgggt ctgaacttgt 3350
 agactcggtc acagtatcaa ataaaatcta taacagaaaa aaaaaaaaaa 3400
 a 3401

<210> 250

<211> 546

<212> PRT

<213> Homo Sapien

<400> 250

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gln | Thr | Ile | Ile | Lys | Val | Ile | Lys | Phe | Ile | Leu | Ile | Ile |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Cys | Tyr | Thr | Val | Tyr | Tyr | Val | His | Asn | Ile | Lys | Phe | Asp | Val | Asp |
| | | | | 20 | | | | | 25 | | | | 30 | |
| Cys | Thr | Val | Asp | Ile | Glu | Ser | Leu | Thr | Gly | Tyr | Arg | Thr | Tyr | Arg |
| | | | | 35 | | | | | 40 | | | | 45 | |
| Cys | Ala | His | Pro | Leu | Ala | Thr | Leu | Phe | Lys | Ile | Leu | Ala | Ser | Phe |
| | | | | 50 | | | | | 55 | | | | 60 | |
| Tyr | Ile | Ser | Leu | Val | Ile | Phe | Tyr | Gly | Leu | Ile | Cys | Met | Tyr | Thr |
| | | | | 65 | | | | | 70 | | | | 75 | |
| Leu | Trp | Trp | Met | Leu | Arg | Arg | Ser | Leu | Lys | Lys | Tyr | Ser | Phe | Glu |
| | | | | 80 | | | | | 85 | | | | 90 | |
| Ser | Ile | Arg | Glu | Glu | Ser | Ser | Tyr | Ser | Asp | Ile | Pro | Asp | Val | Lys |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 95 | | 100 | | 105 |
| Asn Asp Phe Ala Phe Met Leu His Leu Ile Asp Gln Tyr Asp Pro | | | | | |
| | 110 | | 115 | | 120 |
| Leu Tyr Ser Lys Arg Phe Ala Val Phe Leu Ser Glu Val Ser Glu | | | | | |
| | 125 | | 130 | | 135 |
| Asn Lys Leu Arg Gln Leu Asn Leu Asn Asn Glu Trp Thr Leu Asp | | | | | |
| | 140 | | 145 | | 150 |
| Lys Leu Arg Gln Arg Leu Thr Lys Asn Ala Gln Asp Lys Leu Glu | | | | | |
| | 155 | | 160 | | 165 |
| Leu His Leu Phe Met Leu Ser Gly Ile Pro Asp Thr Val Phe Asp | | | | | |
| | 170 | | 175 | | 180 |
| Leu Val Glu Leu Glu Val Leu Lys Leu Glu Leu Ile Pro Asp Val | | | | | |
| | 185 | | 190 | | 195 |
| Thr Ile Pro Pro Ser Ile Ala Gln Leu Thr Gly Leu Lys Glu Leu | | | | | |
| | 200 | | 205 | | 210 |
| Trp Leu Tyr His Thr Ala Ala Lys Ile Glu Ala Pro Ala Leu Ala | | | | | |
| | 215 | | 220 | | 225 |
| Phe Leu Arg Glu Asn Leu Arg Ala Leu His Ile Lys Phe Thr Asp | | | | | |
| | 230 | | 235 | | 240 |
| Ile Lys Glu Ile Pro Leu Trp Ile Tyr Ser Leu Lys Thr Leu Glu | | | | | |
| | 245 | | 250 | | 255 |
| Glu Leu His Leu Thr Gly Asn Leu Ser Ala Glu Asn Asn Arg Tyr | | | | | |
| | 260 | | 265 | | 270 |
| Ile Val Ile Asp Gly Leu Arg Glu Leu Lys Arg Leu Lys Val Leu | | | | | |
| | 275 | | 280 | | 285 |
| Arg Leu Lys Ser Asn Leu Ser Lys Leu Pro Gln Val Val Thr Asp | | | | | |
| | 290 | | 295 | | 300 |
| Val Gly Val His Leu Gln Lys Leu Ser Ile Asn Asn Glu Gly Thr | | | | | |
| | 305 | | 310 | | 315 |
| Lys Leu Ile Val Leu Asn Ser Leu Lys Lys Met Ala Asn Leu Thr | | | | | |
| | 320 | | 325 | | 330 |
| Glu Leu Glu Leu Ile Arg Cys Asp Leu Glu Arg Ile Pro His Ser | | | | | |
| | 335 | | 340 | | 345 |
| Ile Phe Ser Leu His Asn Leu Gln Glu Ile Asp Leu Lys Asp Asn | | | | | |
| | 350 | | 355 | | 360 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Leu | Lys | Thr | Ile | Glu | Glu | Ile | Ile | Ser | Phe | Gln | His | Leu | His |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Arg | Leu | Thr | Cys | Leu | Lys | Leu | Trp | Tyr | Asn | His | Ile | Ala | Tyr | Ile |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Pro | Ile | Gln | Ile | Gly | Asn | Leu | Thr | Asn | Leu | Glu | Arg | Leu | Tyr | Leu |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Asn | Arg | Asn | Lys | Ile | Glu | Lys | Ile | Pro | Thr | Gln | Leu | Phe | Tyr | Cys |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Arg | Lys | Leu | Arg | Tyr | Leu | Asp | Leu | Ser | His | Asn | Asn | Leu | Thr | Phe |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Leu | Pro | Ala | Asp | Ile | Gly | Leu | Leu | Gln | Asn | Leu | Gln | Asn | Leu | Ala |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Ile | Thr | Ala | Asn | Arg | Ile | Glu | Thr | Leu | Pro | Pro | Glu | Leu | Phe | Gln |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Cys | Arg | Lys | Leu | Arg | Ala | Leu | His | Leu | Gly | Asn | Asn | Val | Leu | Gln |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ser | Leu | Pro | Ser | Arg | Val | Gly | Glu | Leu | Thr | Asn | Leu | Thr | Gln | Ile |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Glu | Leu | Arg | Gly | Asn | Arg | Leu | Glu | Cys | Leu | Pro | Val | Glu | Leu | Gly |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Glu | Cys | Pro | Leu | Leu | Lys | Arg | Ser | Gly | Leu | Val | Val | Glu | Glu | Asp |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Leu | Phe | Asn | Thr | Leu | Pro | Pro | Glu | Val | Lys | Glu | Arg | Leu | Trp | Arg |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Ala | Asp | Lys | Glu | Gln | Ala | | | | | | | | | |
| | | | | 545 | | | | | | | | | | |

<210> 251

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 251

caacaatgag ggcaccaagc 20

<210> 252

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 252

gatggctagg ttctggaggt tctg 24

<210> 253

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 253

caacctgcag gagattgacc tcaaggacaa caacctcaag accatcg 47

<210> 254

<211> 1650

<212> DNA

<213> Homo Sapien

<400> 254

gcctgttgct gatgctgccg tgcggtaactt gtcattggagc tggcactgcg 50
gcgctctccc gtcccgcggg ggttgctgct gctgccgctg ctgctgggcc 100
tgaacgcagg agctgtcatt gactggccca cagaggaggg caaggaagta 150
tgggattatg tgacggtccg caaggatgcc tacatgttct ggtggctcta 200
ttatgccacc aactcctgca agaacttctc agaactgccc ctggtcatgt 250
ggcttcaggg cgggtccaggc ggttctagca ctggatttgg aaactttgag 300
gaaattgggc cccttgacag tgatctcaaa ccacggaaaa ccacctggct 350
ccaggctgcc agtctcctat ttgtggataa tcccggtgggc actgggttca 400
gttatgtgaa tggtagtggt gcctatgcca aggacctggc tatggtaggt 450
tcagacatga tggttctcct gaagaccttc ttcagttgcc acaaagaatt 500
ccagacagtt ccattctaca ttttctcaga gtctatgga ggaaaaatgg 550
cagctggcat tgggtctagag ctttataagg ccattcagcg agggaccatc 600
aagtgcact ttgcgggggt tgccttgggt gattcctgga tctcccctgt 650
tgattcgggtg ctctcctggg gaccttacct gtacagcatg tctcttctcg 700

aagacaaagg tctggcagag gtgtctaagg ttgcagagca agtactgaat 750
gccgtaaata aggggctcta cagagaggcc acagagctgt gggggaaagc 800
agaaatgatac attgaacaga acacagatgg ggtgaacttc tataacatct 850
taactaaaag cactcccacg tctacaatgg agtcgagtct agaattcaca 900
cagagccacc tagtttgtct ttgtcagcgc cacgtgagac acctacaacg 950
agatgcctta agccagctca tgaatggccc catcagaaaag aagctcaaaa 1000
ttattcctga ggatcaatcc tggggaggcc aggctaccaa cgtctttgtg 1050
aacatggagg aggacttcat gaagccagtc attagcattg tggacgagtt 1100
gctggaggca gggatcaacg tgacgggtga taatggacag ctggatctca 1150
tcgtagatac catgggtcag gaggcctggg tgcggaaaact gaagtggcca 1200
gaactgccta aattcagtc gctgaagtgg aaggccctgt acagtgaccc 1250
taaactcttg gaaacatctg cttttgtcaa gtccatacaag aaccttgctt 1300
tctactggat tctgaaagct ggtcatatgg ttccttctga ccaaggggac 1350
atggctctga agatgatgag actggtgact cagcaagaat aggatggatg 1400
gggctggaga tgagctgggt tggccttggg gcacagagct gagctgaggc 1450
cgctgaagct gtaggaagcg ccattcttcc ctgtatctaa ctggggctgt 1500
gatcaagaag gttctgacca gcttctgcag aggataaaat cattgtctct 1550
ggaggcaatt tggaaattat ttctgcttct taaaaaacc taagattttt 1600
taaaaaattg atttgttttg atcaaaataa aggatgataa tagatattaa 1650

<210> 255

<211> 452

<212> PRT

<213> Homo Sapien

<400> 255

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Leu | Ala | Leu | Arg | Arg | Ser | Pro | Val | Pro | Arg | Trp | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Leu | Leu | Pro | Leu | Leu | Leu | Gly | Leu | Asn | Ala | Gly | Ala | Val | Ile | Asp |
| | | | 20 | | | | | | 25 | | | | 30 | |
| Trp | Pro | Thr | Glu | Glu | Gly | Lys | Glu | Val | Trp | Asp | Tyr | Val | Thr | Val |
| | | | 35 | | | | | | 40 | | | | 45 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Lys | Asp | Ala | Tyr | Met | Phe | Trp | Trp | Leu | Tyr | Tyr | Ala | Thr | Asn | 50 | 55 | 60 |
| Ser | Cys | Lys | Asn | Phe | Ser | Glu | Leu | Pro | Leu | Val | Met | Trp | Leu | Gln | 65 | 70 | 75 |
| Gly | Gly | Pro | Gly | Gly | Ser | Ser | Thr | Gly | Phe | Gly | Asn | Phe | Glu | Glu | 80 | 85 | 90 |
| Ile | Gly | Pro | Leu | Asp | Ser | Asp | Leu | Lys | Pro | Arg | Lys | Thr | Thr | Trp | 95 | 100 | 105 |
| Leu | Gln | Ala | Ala | Ser | Leu | Leu | Phe | Val | Asp | Asn | Pro | Val | Gly | Thr | 110 | 115 | 120 |
| Gly | Phe | Ser | Tyr | Val | Asn | Gly | Ser | Gly | Ala | Tyr | Ala | Lys | Asp | Leu | 125 | 130 | 135 |
| Ala | Met | Val | Ala | Ser | Asp | Met | Met | Val | Leu | Leu | Lys | Thr | Phe | Phe | 140 | 145 | 150 |
| Ser | Cys | His | Lys | Glu | Phe | Gln | Thr | Val | Pro | Phe | Tyr | Ile | Phe | Ser | 155 | 160 | 165 |
| Glu | Ser | Tyr | Gly | Gly | Lys | Met | Ala | Ala | Gly | Ile | Gly | Leu | Glu | Leu | 170 | 175 | 180 |
| Tyr | Lys | Ala | Ile | Gln | Arg | Gly | Thr | Ile | Lys | Cys | Asn | Phe | Ala | Gly | 185 | 190 | 195 |
| Val | Ala | Leu | Gly | Asp | Ser | Trp | Ile | Ser | Pro | Val | Asp | Ser | Val | Leu | 200 | 205 | 210 |
| Ser | Trp | Gly | Pro | Tyr | Leu | Tyr | Ser | Met | Ser | Leu | Leu | Glu | Asp | Lys | 215 | 220 | 225 |
| Gly | Leu | Ala | Glu | Val | Ser | Lys | Val | Ala | Glu | Gln | Val | Leu | Asn | Ala | 230 | 235 | 240 |
| Val | Asn | Lys | Gly | Leu | Tyr | Arg | Glu | Ala | Thr | Glu | Leu | Trp | Gly | Lys | 245 | 250 | 255 |
| Ala | Glu | Met | Ile | Ile | Glu | Gln | Asn | Thr | Asp | Gly | Val | Asn | Phe | Tyr | 260 | 265 | 270 |
| Asn | Ile | Leu | Thr | Lys | Ser | Thr | Pro | Thr | Ser | Thr | Met | Glu | Ser | Ser | 275 | 280 | 285 |
| Leu | Glu | Phe | Thr | Gln | Ser | His | Leu | Val | Cys | Leu | Cys | Gln | Arg | His | 290 | 295 | 300 |
| Val | Arg | His | Leu | Gln | Arg | Asp | Ala | Leu | Ser | Gln | Leu | Met | Asn | Gly | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 305 | 310 | 315 |
| Pro Ile Arg Lys Lys Leu Lys Ile Ile | Pro Glu Asp Gln Ser Trp | |
| 320 | 325 | 330 |
| Gly Gly Gln Ala Thr Asn Val Phe Val | Asn Met Glu Glu Asp Phe | |
| 335 | 340 | 345 |
| Met Lys Pro Val Ile Ser Ile Val Asp | Glu Leu Leu Glu Ala Gly | |
| 350 | 355 | 360 |
| Ile Asn Val Thr Val Tyr Asn Gly Gln | Leu Asp Leu Ile Val Asp | |
| 365 | 370 | 375 |
| Thr Met Gly Gln Glu Ala Trp Val Arg | Lys Leu Lys Trp Pro Glu | |
| 380 | 385 | 390 |
| Leu Pro Lys Phe Ser Gln Leu Lys Trp | Lys Ala Leu Tyr Ser Asp | |
| 395 | 400 | 405 |
| Pro Lys Ser Leu Glu Thr Ser Ala Phe | Val Lys Ser Tyr Lys Asn | |
| 410 | 415 | 420 |
| Leu Ala Phe Tyr Trp Ile Leu Lys Ala | Gly His Met Val Pro Ser | |
| 425 | 430 | 435 |
| Asp Gln Gly Asp Met Ala Leu Lys Met | Met Arg Leu Val Thr Gln | |
| 440 | 445 | 450 |

Gln Glu

<210> 256

<211> 1100

<212> DNA

<213> Homo Sapien

<400> 256

```

ggccgcggga gaggaggcca tgggcgcgcg cggggcgctg ctgctggcgc 50
tgctgctggc tggggtgga ctcaggaagc cggagtcgca ggaggcggcg 100
ccgttatcag gaccatgcgg ccgacgggtc atcacgtcgc gcatcgtggg 150
tgagaggac gccgaactcg ggcgttgcc gtggcagggg agcctgcgcc 200
tgtgggattc ccacgtatgc ggagttagcc tgctcagcca ccgctgggca 250
ctcacggcgg cgcactgctt tgaaacctat agtgacctta gtgatccctc 300
cgggtggatg gtccagtttg gccagctgac ttccatgcc aacctctgga 350
gcctgcaggc ctactacacc cgttacttcg tatcgaatat ctatctgagc 400

```



```
<210> 257
<211> 314
<212> PRT
<213> Homo Sapien
```

```

<400> 257
Met Gly Ala Arg Gly Ala Leu Leu Leu Ala Leu Leu Leu Ala Arg
  1                      5                      10                      15

Ala Gly Leu Arg Lys Pro Glu Ser Gln Glu Ala Ala Pro Leu Ser
                      20                      25                      30

Gly Pro Cys Gly Arg Arg Val Ile Thr Ser Arg Ile Val Gly Gly
                      35                      40                      45

Glu Asp Ala Glu Leu Gly Arg Trp Pro Trp Gln Gly Ser Leu Arg
                      50                      55                      60

Leu Trp Asp Ser His Val Cys Gly Val Ser Leu Leu Ser His Arg
                      65                      70                      75

Trp Ala Leu Thr Ala Ala His Cys Phe Glu Thr Tyr Ser Asp Leu
                      80                      85                      90

```

Ser Asp Pro Ser Gly Trp Met Val Gln Phe Gly Gln Leu Thr Ser
 95 100 105
 Met Pro Ser Phe Trp Ser Leu Gln Ala Tyr Tyr Thr Arg Tyr Phe
 110 115 120
 Val Ser Asn Ile Tyr Leu Ser Pro Arg Tyr Leu Gly Asn Ser Pro
 125 130 135
 Tyr Asp Ile Ala Leu Val Lys Leu Ser Ala Pro Val Thr Tyr Thr
 140 145 150
 Lys His Ile Gln Pro Ile Cys Leu Gln Ala Ser Thr Phe Glu Phe
 155 160 165
 Glu Asn Arg Thr Asp Cys Trp Val Thr Gly Trp Gly Tyr Ile Lys
 170 175 180
 Glu Asp Glu Ala Leu Pro Ser Pro His Thr Leu Gln Glu Val Gln
 185 190 195
 Val Ala Ile Ile Asn Asn Ser Met Cys Asn His Leu Phe Leu Lys
 200 205 210
 Tyr Ser Phe Arg Lys Asp Ile Phe Gly Asp Met Val Cys Ala Gly
 215 220 225
 Asn Ala Gln Gly Gly Lys Asp Ala Cys Phe Gly Asp Ser Gly Gly
 230 235 240
 Pro Leu Ala Cys Asn Lys Asn Gly Leu Trp Tyr Gln Ile Gly Val
 245 250 255
 Val Ser Trp Gly Val Gly Cys Gly Arg Pro Asn Arg Pro Gly Val
 260 265 270
 Tyr Thr Asn Ile Ser His His Phe Glu Trp Ile Gln Lys Leu Met
 275 280 285
 Ala Gln Ser Gly Met Ser Gln Pro Asp Pro Ser Trp Pro Leu Leu
 290 295 300
 Phe Phe Pro Leu Leu Trp Ala Leu Pro Leu Leu Gly Pro Val
 305 310

<210> 258

<211> 2427

<212> DNA

<213> Homo Sapien

<400> 258

cccacgcgtc cgcggacgcg tgggaagggc agaatgggac tccaagcctg 50

| | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398 | 2399 | 2400 | 2401 | 2402 | 2403 | 2404 | 2405 | 2406 | 2407 | 2408 | 2409 | 2410 | 2411 | 2412 | 2413 | 2414 | 2415 | 2416 | 2417 | 2418 | 2419 | 2420 | 2421 | 2422 | 2 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|

tgatggctac tgggtgggtca gcaacagagt gccattcca tgggtgtccg 1450
 gaacctcggc ctctactcca gtgtttgggg ggatcctatc cttgatcaat 1500
 gagcacagga tccttagtgg ccgccccctt cttggctttc tcaacccaag 1550
 gctctaccag cagcatgggg caggtctctt tgatgtaacc cgtggctgcc 1600
 atgagtcctg tctggatgaa gaggtagagg gccagggttt ctgctctggg 1650
 cctggctggg atcctgtaac aggtctggga acaccaactt ccagctttg 1700
 ctgaagactc tactcaacc ctgaccttt cctatcagga gagatggctt 1750
 gtcccctgcc ctgaagctgg cagttcagtc ccttattctg ccctggtgga 1800
 agccctgctg aacctcaac tattgactgc tgcagacagc ttatctccct 1850
 aacctgaaa tgctgtgagc ttgacttgac tccaacctt accatgctcc 1900
 atcatactca ggtctcccta ctctgcctt agattcctca ataagatgct 1950
 gtaactagca ttttttgaat gcctctccct ccgcatctca tctttctctt 2000
 ttcaatcagg cttttccaaa gggttgtata cagactctgt gcactatttc 2050
 acttgatatt cattcccaa ttactgcaa ggagacctct actgtcaccg 2100
 tttactcttt cctacctga catccagaaa caatggcctc cagtgcatac 2150
 ttctcaatct ttgctttatg gcctttccat catagttgcc cactccctct 2200
 ccttacttag cttccaggtc ttaacttctc tgactactct tgtcttcctc 2250
 tctcatcaat ttctgcttct tcatggaatg ctgaccttca ttgctccatt 2300
 tgtagatttt tgcctctctc agtttactca ttgtccctg gaacaaatca 2350
 ctgacatcta caaccattac catctcacta aataagactt tctatccaat 2400
 aatgattgat acctcaaatg taaaaaa 2427

<210> 259

<211> 556

<212> PRT

<213> Homo Sapien

<400> 259

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Gln | Ala | Cys | Leu | Leu | Gly | Leu | Phe | Ala | Leu | Ile | Leu |
| 1 | | | | | 5 | | | | 10 | | | | 15 | |

Ser Gly Lys Cys Ser Tyr Ser Pro Glu Pro Asp Gln Arg Arg Thr

| 20 | | | | | | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Leu | Pro | Pro | Gly | Trp | Val | Ser | Leu | Gly | Arg | Ala | Asp | Pro | Glu | Glu | | | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Glu | Leu | Ser | Leu | Thr | Phe | Ala | Leu | Arg | Gln | Gln | Asn | Val | Glu | Arg | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Leu | Ser | Glu | Leu | Val | Gln | Ala | Val | Ser | Asp | Pro | Ser | Ser | Pro | Gln | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Tyr | Gly | Lys | Tyr | Leu | Thr | Leu | Glu | Asn | Val | Ala | Asp | Leu | Val | Arg | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Pro | Ser | Pro | Leu | Thr | Leu | His | Thr | Val | Gln | Lys | Trp | Leu | Leu | Ala | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Ala | Gly | Ala | Gln | Lys | Cys | His | Ser | Val | Ile | Thr | Gln | Asp | Phe | Leu | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Thr | Cys | Trp | Leu | Ser | Ile | Arg | Gln | Ala | Glu | Leu | Leu | Leu | Pro | Gly | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Ala | Glu | Phe | His | His | Tyr | Val | Gly | Gly | Pro | Thr | Glu | Thr | His | Val | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Val | Arg | Ser | Pro | His | Pro | Tyr | Gln | Leu | Pro | Gln | Ala | Leu | Ala | Pro | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| His | Val | Asp | Phe | Val | Gly | Gly | Leu | His | Arg | Phe | Pro | Pro | Thr | Ser | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Ser | Leu | Arg | Gln | Arg | Pro | Glu | Pro | Gln | Val | Thr | Gly | Thr | Val | Gly | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Leu | His | Leu | Gly | Val | Thr | Pro | Ser | Val | Ile | Arg | Lys | Arg | Tyr | Asn | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Leu | Thr | Ser | Gln | Asp | Val | Gly | Ser | Gly | Thr | Ser | Asn | Asn | Ser | Gln | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Ala | Cys | Ala | Gln | Phe | Leu | Glu | Gln | Tyr | Phe | His | Asp | Ser | Asp | Leu | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Ala | Gln | Phe | Met | Arg | Leu | Phe | Gly | Gly | Asn | Phe | Ala | His | Gln | Ala | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ser | Val | Ala | Arg | Val | Val | Gly | Gln | Gln | Gly | Arg | Gly | Arg | Ala | Gly | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ile | Glu | Ala | Ser | Leu | Asp | Val | Gln | Tyr | Leu | Met | Ser | Ala | Gly | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ile | Ser | Thr | Trp | Val | Tyr | Ser | Ser | Pro | Gly | Arg | His | Glu | Gly | 290 | 295 | 300 |
| Gln | Glu | Pro | Phe | Leu | Gln | Trp | Leu | Met | Leu | Leu | Ser | Asn | Glu | Ser | 305 | 310 | 315 |
| Ala | Leu | Pro | His | Val | His | Thr | Val | Ser | Tyr | Gly | Asp | Asp | Glu | Asp | 320 | 325 | 330 |
| Ser | Leu | Ser | Ser | Ala | Tyr | Ile | Gln | Arg | Val | Asn | Thr | Glu | Leu | Met | 335 | 340 | 345 |
| Lys | Ala | Ala | Ala | Arg | Gly | Leu | Thr | Leu | Leu | Phe | Ala | Ser | Gly | Asp | 350 | 355 | 360 |
| Ser | Gly | Ala | Gly | Cys | Trp | Ser | Val | Ser | Gly | Arg | His | Gln | Phe | Arg | 365 | 370 | 375 |
| Pro | Thr | Phe | Pro | Ala | Ser | Ser | Pro | Tyr | Val | Thr | Thr | Val | Gly | Gly | 380 | 385 | 390 |
| Thr | Ser | Phe | Gln | Glu | Pro | Phe | Leu | Ile | Thr | Asn | Glu | Ile | Val | Asp | 395 | 400 | 405 |
| Tyr | Ile | Ser | Gly | Gly | Gly | Phe | Ser | Asn | Val | Phe | Pro | Arg | Pro | Ser | 410 | 415 | 420 |
| Tyr | Gln | Glu | Glu | Ala | Val | Thr | Lys | Phe | Leu | Ser | Ser | Ser | Pro | His | 425 | 430 | 435 |
| Leu | Pro | Pro | Ser | Ser | Tyr | Phe | Asn | Ala | Ser | Gly | Arg | Ala | Tyr | Pro | 440 | 445 | 450 |
| Asp | Val | Ala | Ala | Leu | Ser | Asp | Gly | Tyr | Trp | Val | Val | Ser | Asn | Arg | 455 | 460 | 465 |
| Val | Pro | Ile | Pro | Trp | Val | Ser | Gly | Thr | Ser | Ala | Ser | Thr | Pro | Val | 470 | 475 | 480 |
| Phe | Gly | Gly | Ile | Leu | Ser | Leu | Ile | Asn | Glu | His | Arg | Ile | Leu | Ser | 485 | 490 | 495 |
| Gly | Arg | Pro | Pro | Leu | Gly | Phe | Leu | Asn | Pro | Arg | Leu | Tyr | Gln | Gln | 500 | 505 | 510 |
| His | Gly | Ala | Gly | Leu | Phe | Asp | Val | Thr | Arg | Gly | Cys | His | Glu | Ser | 515 | 520 | 525 |
| Cys | Leu | Asp | Glu | Glu | Val | Glu | Gly | Gln | Gly | Phe | Cys | Ser | Gly | Pro | 530 | 535 | 540 |
| Gly | Trp | Asp | Pro | Val | Thr | Gly | Trp | Gly | Thr | Pro | Thr | Ser | Gln | Leu | 545 | 550 | 555 |

Cys

<210> 260

<211> 1638

<212> DNA

<213> Homo Sapien

<400> 260

```

gccgcgcgct ctctcccggc gccacacct gtctgagcgg cgcagcgagc 50
cgcgggcccgg gcgggctgct cggcgcgga cagtgctcgg catggcaggg 100
attccagggc tctcttctct tctcttcttt ctgctctgtg ctgttgggca 150
agtgagccct tacagtgcc cctggaaacc cacttggcct gcataccgcc 200
tccctgtcgt cttgccccag tctaccctca atttagccaa gccagacttt 250
ggagccgaag ccaaattaga agtatcttct tcatgtggac ccagtgctca 300
taagggaaact ccactgccc cttacgaaga ggccaagcaa tatctgtctt 350
atgaaacgct ctatgccaat ggcagccgca cagagacgca ggtgggcatc 400
tacatcctca gcagtagtgg agatggggcc caacaccgag actcagggtc 450
ttcaggaaaag tctcgaagga agcggcagat ttatggctat gacagcaggt 500
tcagcatttt tgggaaggac ttctgtctca actacccttt ctcaacatca 550
gtgaagtat ccacgggctg caccggcacc ctgggtggcag agaagcatgt 600
cctcacagct gccactgca tacacgatgg aaaaacctat gtgaaaggaa 650
cccagaagct tcgagtgggc ttcctaaagc ccaagtttaa agatggtggt 700
cgagggggcca acgactccac ttcagccatg cccgagcaga tgaaatttca 750
gtggatccgg gtgaaacgca cccatgtgcc caagggttgg atcaagggca 800
atgccaatga catcggcatg gattatgatt atgccctcct ggaactcaaa 850
aagccccaca agagaaaatt tatgaagatt ggggtgagcc ctcttgctaa 900
gcagctgcc a gggggcagaa ttcacttctc tggttatgac aatgaccgac 950
caggcaatth ggtgtatcgc ttctgtgacg tcaaagacga gacctatgac 1000
ttgctctacc agcaatgcga tgcccagcca ggggccagcg ggtctggggt 1050
ctatgtgagg atgtggaaga gacagcagca gaagtgggag cgaaaaatta 1100

```

ttggcatttt ttcagggcac cagtgggtgg acatgaatgg ttccccacag 1150
 gatttcaacg tggtgtcag aatcactcct ctcaaatacg cccagatttg 1200
 ctattggatt aaaggaaact acctggattg tagggagggg tgacacagtg 1250
 ttccctcctg gcagcaatta agggctctca tgttcttatt ttaggagagg 1300
 ccaaattgtt ttttgtcatt ggcgtgcaca cgtgtgtgtg tgtgtgtgtg 1350
 tgtgtgtaag gtgtcttata atcttttacc tatttcttac aattgcaaga 1400
 tgactggctt tactatttga aaactggttt gtgtatcata tcatatatca 1450
 ttttaagcagt ttgaaggcat acttttgcag agaaataaaa aaaataactga 1500
 tttggggcaa tgaggaatat ttgacaatta agttaatctt cacgtttttg 1550
 caaactttga tttttatttc atctgaactt gtttcaaaga tttatattaa 1600
 atatttggca tacaagagat atgaaaaaaaa aaaaaaaaa 1638

<210> 261

<211> 383

<212> PRT

<213> Homo Sapien

<400> 261

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Ile | Pro | Gly | Leu | Leu | Phe | Leu | Leu | Phe | Phe | Leu | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Val | Gly | Gln | Val | Ser | Pro | Tyr | Ser | Ala | Pro | Trp | Lys | Pro |
| | | | 20 | | | | | | 25 | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Trp | Pro | Ala | Tyr | Arg | Leu | Pro | Val | Val | Leu | Pro | Gln | Ser | Thr |
| | | | 35 | | | | | | 40 | | | | 45 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asn | Leu | Ala | Lys | Pro | Asp | Phe | Gly | Ala | Glu | Ala | Lys | Leu | Glu |
| | | | 50 | | | | | 55 | | | | | 60 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Ser | Ser | Cys | Gly | Pro | Gln | Cys | His | Lys | Gly | Thr | Pro | Leu |
| | | | 65 | | | | | 70 | | | | | 75 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Thr | Tyr | Glu | Glu | Ala | Lys | Gln | Tyr | Leu | Ser | Tyr | Glu | Thr | Leu |
| | | | 80 | | | | | 85 | | | | | 90 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ala | Asn | Gly | Ser | Arg | Thr | Glu | Thr | Gln | Val | Gly | Ile | Tyr | Ile |
| | | | 95 | | | | | | 100 | | | | 105 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Ser | Ser | Gly | Asp | Gly | Ala | Gln | His | Arg | Asp | Ser | Gly | Ser |
| | | | 110 | | | | | 115 | | | | | 120 | |

| | | | | |
|-----------------|---|-----|-----|-----|
| Ser Gly Lys Ser | Arg Arg Lys Arg Gln Ile Tyr Gly Tyr Asp Ser | 125 | 130 | 135 |
| Arg Phe Ser Ile | Phe Gly Lys Asp Phe Leu Leu Asn Tyr Pro Phe | 140 | 145 | 150 |
| Ser Thr Ser Val | Lys Leu Ser Thr Gly Cys Thr Gly Thr Leu Val | 155 | 160 | 165 |
| Ala Glu Lys His | Val Leu Thr Ala Ala His Cys Ile His Asp Gly | 170 | 175 | 180 |
| Lys Thr Tyr Val | Lys Gly Thr Gln Lys Leu Arg Val Gly Phe Leu | 185 | 190 | 195 |
| Lys Pro Lys Phe | Lys Asp Gly Gly Arg Gly Ala Asn Asp Ser Thr | 200 | 205 | 210 |
| Ser Ala Met Pro | Glu Gln Met Lys Phe Gln Trp Ile Arg Val Lys | 215 | 220 | 225 |
| Arg Thr His Val | Pro Lys Gly Trp Ile Lys Gly Asn Ala Asn Asp | 230 | 235 | 240 |
| Ile Gly Met Asp | Tyr Asp Tyr Ala Leu Leu Glu Leu Lys Lys Pro | 245 | 250 | 255 |
| His Lys Arg Lys | Phe Met Lys Ile Gly Val Ser Pro Pro Ala Lys | 260 | 265 | 270 |
| Gln Leu Pro Gly | Gly Arg Ile His Phe Ser Gly Tyr Asp Asn Asp | 275 | 280 | 285 |
| Arg Pro Gly Asn | Leu Val Tyr Arg Phe Cys Asp Val Lys Asp Glu | 290 | 295 | 300 |
| Thr Tyr Asp Leu | Leu Tyr Gln Gln Cys Asp Ala Gln Pro Gly Ala | 305 | 310 | 315 |
| Ser Gly Ser Gly | Val Tyr Val Arg Met Trp Lys Arg Gln Gln Gln | 320 | 325 | 330 |
| Lys Trp Glu Arg | Lys Ile Ile Gly Ile Phe Ser Gly His Gln Trp | 335 | 340 | 345 |
| Val Asp Met Asn | Gly Ser Pro Gln Asp Phe Asn Val Ala Val Arg | 350 | 355 | 360 |
| Ile Thr Pro Leu | Lys Tyr Ala Gln Ile Cys Tyr Trp Ile Lys Gly | 365 | 370 | 375 |
| Asn Tyr Leu Asp | Cys Arg Glu Gly | 380 | | |

<210> 262
 <211> 1378
 <212> DNA
 <213> Homo Sapien

<400> 262
 gcatcgccct gggctctctcg agcctgctgc ctgctcccc gccccaccag 50
 ccatgggtggg ttctggagcg ccccagccc tgggtggggg ctgtctcggc 100
 accttcacct cctgctgct gctggcgctg acagccatcc tcaatgcggc 150
 caggatacct gttccccag cctgtgggaa gcccagcag ctgaaccggg 200
 ttgtgggcgg cgaggacagc actgacagcg agtggccctg gatcgtgagc 250
 atccagaaga atgggaccca cactgcgca ggttctctgc tcaccagccg 300
 ctgggtgatc actgctgcc actgtttcaa ggacaacctg aacaaccat 350
 acctgttctc tgtgctgctg ggggcctggc agctggggaa ccctggctct 400
 cgggtcccaga aggtgggtgt tgcctgggtg gagccccacc ctgtgtattc 450
 ctggaaggaa ggtgcctgtg cagacattgc cctgggtgct ctcgagcgct 500
 ccatacagtt ctgagcgcg gtccctgcca tctgcctacc tgatgcctct 550
 atccacctcc ctccaaacac cactgctgg atctcaggct gggggagcat 600
 ccaagatgga gttcccttgc cccaccctca gacctgcag aagctgaagg 650
 ttctatcat cgactcgga gtctgcagcc atctgtactg gcggggagca 700
 ggacagggac ccatcactga ggacatgctg tgtgccggct acttgagggg 750
 ggagcgggat gcttgtctgg gcgactccgg gggccccctc atgtgccagg 800
 tggacggcgc ctggctgctg gccggcatca tcagctgggg cgagggtgt 850
 gccgagcgca acaggcccgg ggtctacatc agcctctctg cgcaccgctc 900
 ctgggtggag aagatcgctg aaggggtgca gctccgcggg cgcgctcagg 950
 ggggtggggc cctcagggca ccgagccagg gctctggggc cgcgcgcgc 1000
 tcctagggcg cagcgggacg cggggctcgg atctgaaagg cggccagatc 1050
 cacatctgga tctggatctg cggcggcctc gggcggtttc cccgcgcgta 1100
 aataggctca tctaccteta cctctggggg ccgggacggc tgctgcggaa 1150

```
<210> 263
<211> 317
<212> PRT
<213> Homo Sapien
```

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Val | Ser | Gly | Ala | Pro | Pro | Ala | Leu | Gly | Gly | Gly | Cys | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Thr | Phe | Thr | Ser | Leu | Leu | Leu | Leu | Ala | Ser | Thr | Ala | Ile | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asn | Ala | Ala | Arg | Ile | Pro | Val | Pro | Pro | Ala | Cys | Gly | Lys | Pro | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gln | Leu | Asn | Arg | Val | Val | Gly | Gly | Glu | Asp | Ser | Thr | Asp | Ser | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Trp | Pro | Trp | Ile | Val | Ser | Ile | Gln | Lys | Asn | Gly | Thr | His | His | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Gly | Ser | Leu | Leu | Thr | Ser | Arg | Trp | Val | Ile | Thr | Ala | Ala | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Cys | Phe | Lys | Asp | Asn | Leu | Asn | Lys | Pro | Tyr | Leu | Phe | Ser | Val | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Gly | Ala | Trp | Gln | Leu | Gly | Asn | Pro | Gly | Ser | Arg | Ser | Gln | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Gly | Val | Ala | Trp | Val | Glu | Pro | His | Pro | Val | Tyr | Ser | Trp | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Gly | Ala | Cys | Ala | Asp | Ile | Ala | Leu | Val | Arg | Leu | Glu | Arg | Ser |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ile | Gln | Phe | Ser | Glu | Arg | Val | Leu | Pro | Ile | Cys | Leu | Pro | Asp | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Ile | His | Leu | Pro | Pro | Asn | Thr | His | Cys | Trp | Ile | Ser | Gly | Trp |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Ile | Gln | Asp | Gly | Val | Pro | Leu | Pro | His | Pro | Gln | Thr | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | Lys | Leu | Lys | Val | Pro | Ile | Ile | Asp | Ser | Glu | Val | Cys | Ser | His |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | Tyr | Trp | Arg | Gly | Ala | Gly | Gln | Gly | Pro | Ile | Thr | Glu | Asp | Met |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Cys | Ala | Gly | Tyr | Leu | Glu | Gly | Glu | Arg | Asp | Ala | Cys | Leu | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asp | Ser | Gly | Gly | Pro | Leu | Met | Cys | Gln | Val | Asp | Gly | Ala | Trp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Leu | Ala | Gly | Ile | Ile | Ser | Trp | Gly | Glu | Gly | Cys | Ala | Glu | Arg | Asn |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Arg | Pro | Gly | Val | Tyr | Ile | Ser | Leu | Ser | Ala | His | Arg | Ser | Trp | Val |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Glu | Lys | Ile | Val | Gln | Gly | Val | Gln | Leu | Arg | Gly | Arg | Ala | Gln | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Gly | Gly | Ala | Leu | Arg | Ala | Pro | Ser | Gln | Gly | Ser | Gly | Ala | Ala | Ala |
| | | | | 305 | | | | | 310 | | | | | 315 |

Arg Ser

<210> 264

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 264

gtccgcaagg atgcctacat gttc 24

<210> 265

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 265

gcagaggtgt ctaaggttg 19

<210> 266

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 266

agctctagac caatgccagc ttcc 24

<210> 267

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 267

gccaccaact cctgcaagaa cttctcagaa ctgccctgg tcatg 45

<210> 268

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 268

ggggaattca ccctatgaca ttgcc 25

<210> 269

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 269

gaatgccctg caagcatcaa ctgg 24

<210> 270

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 270

gcacctgtca cctacactaa acacatccag cccatctgtc tccaggcctc 50

<210> 271
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 271
gcggaagggc agaatgggac tccaag 26

<210> 272
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 272
cagccctgcc acatgtgc 18

<210> 273
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 273
tactgggtgg tcagcaac 18

<210> 274
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 274
ggcgaagagc agggtagagac cccg 24

<210> 275
<211> 45

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 275
gccctcatcc tctctggcaa atgcagttac agcccggagc ccgac 45

<210> 276
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 276
gggcagggat tccagggtc c 21

<210> 277
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 277
ggctatgaca gcaggttc 18

<210> 278
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 278
tgacaatgac cgaccagg 18

<210> 279
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 279
gcatcgcatt gctggtagag caag 24

<210> 280
<211> 45
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 280

ttacagtgcc ccctggaaac ccacttggcc tgcataccgc ctccc 45

<210> 281

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 281

cgtctcgagc gctccataca gttcccttgc ccca 34

<210> 282

<211> 61

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 282

tggaggggga gcgggatgct tgtctgggag actccggggg cccctcatg 50

tgccaggtgg a 61

<210> 283

<211> 119

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 283

ccctcagacc ctgcagaagc tgaaggttcc tatcatcgac tcggaagtct 50

gcagccatct gtactggcgg ggagcaggac agggacccat cactgaggac 100

atgctgtgtg ccggctact 119

<210> 284

<211> 1875

<212> DNA

<213> Homo Sapien

<400> 284

gacggctggc caccatgcac ggctcctgca gtttcctgat gcttctgctg 50

ccgctactgc tactgctggt ggccaccaca ggccccgttg gagccctcac 100

| | | | | | |
|-------------|------------|-------------|-------------|-------------|------|
| agatgaggag | aaacgtttga | tgggtggagct | gcacaacctc | taccggggccc | 150 |
| aggatatcccc | gacggcctca | gacatgctgc | acatgagatg | ggacgaggag | 200 |
| ctggccgcct | tcgccaaggc | ctacgcacgg | cagtgcgtgt | ggggccacaa | 250 |
| caaggagcgc | gggcgcgcg | gcgagaatct | gttcgccatc | acagacgagg | 300 |
| gcatggacgt | gccgctggcc | atggaggagt | ggcaccacga | gcgtgagcac | 350 |
| tacaacctca | gcgccgccac | ctgcagccca | ggccagatgt | gcggccacta | 400 |
| cacgcaggtg | gtatgggcca | agacagagag | gatcggctgt | ggttcccact | 450 |
| tctgtgagaa | gctccagggt | gttgaggaga | ccaacatcga | attactggtg | 500 |
| tgcaactatg | agcctccggg | gaacgtgaag | gggaaacggc | cctaccagga | 550 |
| ggggactccg | tgctcccaat | gtccctctgg | ctaccactgc | aagaactccc | 600 |
| tctgtgaacc | catcggaagc | ccggaagatg | ctcaggattt | gccttacctg | 650 |
| gtaactgagg | ccccatcctt | ccgggcgact | gaagcatcag | actctaggaa | 700 |
| aatgggtact | ccttcttccc | tagcaacggg | gattccggct | ttcttggtaa | 750 |
| cagaggtctc | aggctccctg | gcaaccaagg | ctctgcctgc | tgtggaaacc | 800 |
| caggcccca | cttccttagc | aacgaaagac | ccgccctcca | tggcaacaga | 850 |
| ggctccacct | tgcgtaacaa | ctgaggctcc | ttccattttg | gcagctcaca | 900 |
| gcctgcctc | cttggatgag | gagccagtta | ccttcccca | atcgacccat | 950 |
| gttcctatcc | caaaatcagc | agacaaagtg | acagacaaaa | caaaagtgcc | 1000 |
| ctctaggagc | ccagagaact | ctctggacct | caagatgtcc | ctgacagggg | 1050 |
| caagggaact | cctaccccat | gcccaggagg | aggctgaggc | tgaggctgag | 1100 |
| ttgcctcctt | ccagtgaggt | cttggcctca | gtttttccag | cccaggacaa | 1150 |
| gccaggtgag | ctgcaggcca | cactggacca | cacggggcac | acctcctcca | 1200 |
| agtccttgcc | caatttcccc | aatacctctg | ccaccgctaa | tgccacgggt | 1250 |
| gggcgtgccc | tggctctgca | gtcgtccttg | ccagggtgcag | agggccctga | 1300 |
| caagcctagc | gttgtgtcag | ggctgaactc | gggccctggg | catgtgtggg | 1350 |
| gccctctcct | gggactactg | ctcctgcctc | ctctggtggt | ggctggaatc | 1400 |

ttctgaatgg gataccactc aaagggtgaa gaggtcagct gtctctctgt 1450
 catcttcccc accctgtccc cagcccctaa acaagatact tcttggttaa 1500
 ggccctccgg aagggaaagg ctacggggca tgtgcctcat cacaccatcc 1550
 atcctggagg cacaaggcct ggctggctgc gagctcagga ggccgcctga 1600
 ggactgcaca cggggccac acctctcctg cccctccctc ctgagtcctg 1650
 ggggtgggag gatttgaggg agctcactgc ctacctggcc tggggctgtc 1700
 tgccacaca gcatgtgcgc tctccctgag tgctgtgta gctggggatg 1750
 gggattccta ggggcagatg aaggacaagc cccactggag tggggttctt 1800
 tgagtggggg aggcagggac gaggggaagga aagtaactcc tgactctcca 1850
 ataaaaacct gtccaacctg tgaaa 1875

<210> 285

<211> 463

<212> PRT

<213> Homo Sapien

<400> 285

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|--|
| Met | His | Gly | Ser | Cys | Ser | Phe | Leu | Met | Leu | Leu | Leu | Pro | Leu | Leu | | | | | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | | | | |
| Leu | Leu | Leu | Val | Ala | Thr | Thr | Gly | Pro | Val | Gly | Ala | Leu | Thr | Asp | | | | | |
| | | | 20 | | | | | | 25 | | | | | 30 | | | | | |
| Glu | Glu | Lys | Arg | Leu | Met | Val | Glu | Leu | His | Asn | Leu | Tyr | Arg | Ala | | | | | |
| | | | 35 | | | | | | 40 | | | | | 45 | | | | | |
| Gln | Val | Ser | Pro | Thr | Ala | Ser | Asp | Met | Leu | His | Met | Arg | Trp | Asp | | | | | |
| | | | 50 | | | | | | 55 | | | | | 60 | | | | | |
| Glu | Glu | Leu | Ala | Ala | Phe | Ala | Lys | Ala | Tyr | Ala | Arg | Gln | Cys | Val | | | | | |
| | | | 65 | | | | | | 70 | | | | | 75 | | | | | |
| Trp | Gly | His | Asn | Lys | Glu | Arg | Gly | Arg | Arg | Gly | Glu | Asn | Leu | Phe | | | | | |
| | | | 80 | | | | | | 85 | | | | | 90 | | | | | |
| Ala | Ile | Thr | Asp | Glu | Gly | Met | Asp | Val | Pro | Leu | Ala | Met | Glu | Glu | | | | | |
| | | | 95 | | | | | | 100 | | | | | 105 | | | | | |
| Trp | His | His | Glu | Arg | Glu | His | Tyr | Asn | Leu | Ser | Ala | Ala | Thr | Cys | | | | | |
| | | | 110 | | | | | | 115 | | | | | 120 | | | | | |
| Ser | Pro | Gly | Gln | Met | Cys | Gly | His | Tyr | Thr | Gln | Val | Val | Trp | Ala | | | | | |
| | | | 125 | | | | | | 130 | | | | | 135 | | | | | |

| | | | | |
|-----------------|---|-----|-----|-----|
| Lys Thr Glu Arg | Ile Gly Cys Gly Ser His Phe Cys Glu Lys Leu | 140 | 145 | 150 |
| Gln Gly Val Glu | Glu Thr Asn Ile Glu Leu Leu Val Cys Asn Tyr | 155 | 160 | 165 |
| Glu Pro Pro Gly | Asn Val Lys Gly Lys Arg Pro Tyr Gln Glu Gly | 170 | 175 | 180 |
| Thr Pro Cys Ser | Gln Cys Pro Ser Gly Tyr His Cys Lys Asn Ser | 185 | 190 | 195 |
| Leu Cys Glu Pro | Ile Gly Ser Pro Glu Asp Ala Gln Asp Leu Pro | 200 | 205 | 210 |
| Tyr Leu Val Thr | Glu Ala Pro Ser Phe Arg Ala Thr Glu Ala Ser | 215 | 220 | 225 |
| Asp Ser Arg Lys | Met Gly Thr Pro Ser Ser Leu Ala Thr Gly Ile | 230 | 235 | 240 |
| Pro Ala Phe Leu | Val Thr Glu Val Ser Gly Ser Leu Ala Thr Lys | 245 | 250 | 255 |
| Ala Leu Pro Ala | Val Glu Thr Gln Ala Pro Thr Ser Leu Ala Thr | 260 | 265 | 270 |
| Lys Asp Pro Pro | Ser Met Ala Thr Glu Ala Pro Pro Cys Val Thr | 275 | 280 | 285 |
| Thr Glu Val Pro | Ser Ile Leu Ala Ala His Ser Leu Pro Ser Leu | 290 | 295 | 300 |
| Asp Glu Glu Pro | Val Thr Phe Pro Lys Ser Thr His Val Pro Ile | 305 | 310 | 315 |
| Pro Lys Ser Ala | Asp Lys Val Thr Asp Lys Thr Lys Val Pro Ser | 320 | 325 | 330 |
| Arg Ser Pro Glu | Asn Ser Leu Asp Pro Lys Met Ser Leu Thr Gly | 335 | 340 | 345 |
| Ala Arg Glu Leu | Leu Pro His Ala Gln Glu Glu Ala Glu Ala Glu | 350 | 355 | 360 |
| Ala Glu Leu Pro | Pro Ser Ser Glu Val Leu Ala Ser Val Phe Pro | 365 | 370 | 375 |
| Ala Gln Asp Lys | Pro Gly Glu Leu Gln Ala Thr Leu Asp His Thr | 380 | 385 | 390 |
| Gly His Thr Ser | Ser Lys Ser Leu Pro Asn Phe Pro Asn Thr Ser | 395 | 400 | 405 |

Ala Thr Ala Asn Ala Thr Gly Gly Arg Ala Leu Ala Leu Gln Ser
 410 415 420

Ser Leu Pro Gly Ala Glu Gly Pro Asp Lys Pro Ser Val Val Ser
 425 430 435

Gly Leu Asn Ser Gly Pro Gly His Val Trp Gly Pro Leu Leu Gly
 440 445 450

Leu Leu Leu Leu Pro Pro Leu Val Leu Ala Gly Ile Phe
 455 460

<210> 286

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 286

tcctgcagtt tcctgatgc 19

<210> 287

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 287

ctcatattgc acaccagtaa ttcg 24

<210> 288

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 288

atgaggagaa acgtttgatg gtggagctgc acaacctcta ccggg 45

<210> 289

<211> 3662

<212> DNA

<213> Homo Sapien

<400> 289

gtaactgaag tcaggctttt catttgggaa gccccctcaa cagaattcgg 50

tcattctcca agttatggtg gacgtacttc tgttggttctc cctctgcttg 100
 ctttttcaca ttagcagacc ggacttaagt cacaacagat tatctttcat 150
 caaggcaagt tccatgagcc accttcaaag ccttcgagaa gtgaaactga 200
 acaacaatga attggagacc attccaaatc tgggaccagt ctcggaat 250
 attacacttc tctccttggc tggaaacagg attggtgaaa tactccctga 300
 acatctgaaa gagtttcagt cccttgaaac tttggacctt agcagcaaca 350
 atatttcaga gctccaaact gcatttccag ccctacagct caaatatctg 400
 tatctcaaca gcaaccgagt cacatcaatg gaacctgggt attttgacaa 450
 tttggccaac acactccttg tgttaaagct gaacaggaac cgaatctcag 500
 ctatcccacc caagatgttt aaactgcccc aactgcaaca tctcgaattg 550
 aaccgaaaca agattaaaaa tgtagatgga ctgacattcc aaggccttgg 600
 tgctctgaag tctctgaaaa tgcaaagaaa tggagtaacg aaacttatgg 650
 atggagcttt ttgggggctg agcaacatgg aaattttgca gctggaccat 700
 aacaacctaa cagagattac caaaggctgg ctttacggct tgctgatgct 750
 gcaggaactt catctcagcc aaaatgccat caacaggatc agccctgatg 800
 cctgggagtt ctgccagaag ctcagtgagc tggacctaac tttcaatcac 850
 ttatcaagggt tagatgattc aagcttcctt ggcctaagct tactaaatac 900
 actgcacatt gggaacaaca gagtcaagta cattgctgat tgtgccttcc 950
 gggggctttc cagtttaaag actttggatc tgaagaacaa tgaaatttcc 1000
 tggactattg aagacatgaa tggtgctttc tctgggcttg acaaactgag 1050
 gcgactgata ctccaaggaa atcggatccg ttctattact aaaaaagcct 1100
 tcaactggtt ggatgcattg gagcatctag acctgagtga caacgcaatc 1150
 atgtctttac aaggcaatgc attttcacaa atgaagaaac tgcaacaatt 1200
 gcatttaaatt acatcaagcc ttttgtgcga ttgccagcta aaatggctcc 1250
 cacagtgggt ggcggaaaac aactttcaga gctttgtaaa tgccagttgt 1300
 gcccatcctc agctgctaaa aggaagaagc atttttgctg ttagcccaga 1350

tggctttgtg tgtgatgatt ttcccaaacc ccagatcacg gttcagccag 1400
 aaacacagtc ggcaataaaa ggttccaatt tgagtttcat ctgctcagct 1450
 gccagcagca gtgattcccc aatgactttt gcttggaata aagacaatga 1500
 actactgcat gatgctgaaa tggaaaatta tgcacacctc cgggccaag 1550
 gtggcgaggt gatggagtat accaccatcc ttcggctgcg cgaggtggaa 1600
 tttgccagtg aggggaaata tcagtgtgtc atctccaatc actttggttc 1650
 atcctactct gtcaaagcca agcttacagt aaatatgctt ccctcattca 1700
 ccaagacccc catggatctc accatccgag ctggggccat ggcacgcttg 1750
 gagtgtgctg ctgtggggca cccagccccc cagatagcct ggcagaagga 1800
 tgggggcaca gacttcccag ctgcacggga gagacgcatg catgtgatgc 1850
 ccgaggatga cgtgttcttt atcgtggatg tgaagataga ggacattggg 1900
 gtatacagct gcacagctca gaacagtgc ggaagtattt cagcaaatgc 1950
 aactctgact gtccatgaaa caccatcatt tttgoggcca ctgttgacc 2000
 gaactgtaac caaggagaaa acagccgtcc tacagtgcac tgctggagga 2050
 agccctcccc ctaaactgaa ctggaccaa gatgatagcc cattggtggt 2100
 aaccgagagg cacttttttg cagcaggcaa tcagcttctg attattgtgg 2150
 actcagatgt cagtgatgct gggaaatata catgtgagat gtctaacacc 2200
 cttggcactg agagaggaaa cgtgcgcctc agtgtgatcc ccactccaac 2250
 ctgcgactcc cctcagatga cagccccatc gttagacgat gacggatggg 2300
 ccactgtggg tgtcgtgatc atagccgtgg tttgctgtgt ggtgggcacg 2350
 tcactcgtgt ggggtggtcat catataccac acaaggcgga ggaatgaaga 2400
 ttgcagcatt accaacacag atgagaccaa cttgccagca gatattccta 2450
 gttatttgtc atctcaggga acgttagctg acaggcagga tgggtacgtg 2500
 tcttcagaaa gtggaagcca ccaccagttt gtcacatctt caggtgctgg 2550
 atttttctta ccacaacatg acagtagtgg gacctgccat attgacaata 2600
 gcagtgaagc tgatgtggaa gctgccacag atctgttcct ttgtccgttt 2650
 ttgggatcca caggccctat gtatttgaag ggaaatgtgt atggctcaga 2700

tccttttgaa acatatcata caggttgcag tcctgacca agaacagttt 2750
 taatggacca ctatgagccc agttacataa agaaaaagga gtgctacca 2800
 tgtttctcatc cttcagaaga atcctgcgaa cggagcttca gtaatatatc 2850
 gtggccttca catgtgagga agctacttaa cactagttac tctcacaatg 2900
 aaggacctgg aatgaaaaat ctgtgtctaa acaagtcctc tttagatttt 2950
 agtgcaaatac cagagccagc gtcgggtgcc tcgagtaatt ctttcatggg 3000
 tacctttgga aaagctctca ggagacctca cctagatgcc tattcaagct 3050
 ttggacagcc atcagattgt cagccaagag cctttttattt gaaagctcat 3100
 tcttccccag acttggactc tgggtcagag gaagatggga aagaaaggac 3150
 agattttcag gaagaaaatc acatttgtac ctttaaacag acttttagaaa 3200
 actacaggac tccaaatttt cagtcttatg acttggacac atagactgaa 3250
 tgagacccaaa ggaaaagctt aacatactac ctcaagtga cttttattta 3300
 aaagagagag aatccttatgt tttttaaatg gagttatgaa ttttaaaagg 3350
 ataaaaatgc tttattttata cagatgaacc aaaattacaa aaagttatga 3400
 aaatttttat actgggaatg atgctcatat aagaatacct ttttaaacta 3450
 ttttttaact ttgttttatg caaaaaagta tcttacgtaa attaatgata 3500
 taaatcatga ttattttatg tattttttata atgccagatt tctttttatg 3550
 gaaaatgagt tactaaagca ttttaaataa tacctgcctt gtaccatttt 3600
 ttaaatagaa gttacttcat tatattttgc acattatatt taataaaatg 3650
 tgtcaatttg aa 3662

<210> 290

<211> 1059

<212> PRT

<213> Homo Sapien

<400> 290

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Asp | Val | Leu | Leu | Leu | Phe | Ser | Leu | Cys | Leu | Leu | Phe | His |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Arg | Pro | Asp | Leu | Ser | His | Asn | Arg | Leu | Ser | Phe | Ile | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Ser | Met | Ser | His | Leu | Gln | Ser | Leu | Arg | Glu | Val | Lys | Leu | 35 | 40 | 45 |
| Asn | Asn | Asn | Glu | Leu | Glu | Thr | Ile | Pro | Asn | Leu | Gly | Pro | Val | Ser | 50 | 55 | 60 |
| Ala | Asn | Ile | Thr | Leu | Leu | Ser | Leu | Ala | Gly | Asn | Arg | Ile | Val | Glu | 65 | 70 | 75 |
| Ile | Leu | Pro | Glu | His | Leu | Lys | Glu | Phe | Gln | Ser | Leu | Glu | Thr | Leu | 80 | 85 | 90 |
| Asp | Leu | Ser | Ser | Asn | Asn | Ile | Ser | Glu | Leu | Gln | Thr | Ala | Phe | Pro | 95 | 100 | 105 |
| Ala | Leu | Gln | Leu | Lys | Tyr | Leu | Tyr | Leu | Asn | Ser | Asn | Arg | Val | Thr | 110 | 115 | 120 |
| Ser | Met | Glu | Pro | Gly | Tyr | Phe | Asp | Asn | Leu | Ala | Asn | Thr | Leu | Leu | 125 | 130 | 135 |
| Val | Leu | Lys | Leu | Asn | Arg | Asn | Arg | Ile | Ser | Ala | Ile | Pro | Pro | Lys | 140 | 145 | 150 |
| Met | Phe | Lys | Leu | Pro | Gln | Leu | Gln | His | Leu | Glu | Leu | Asn | Arg | Asn | 155 | 160 | 165 |
| Lys | Ile | Lys | Asn | Val | Asp | Gly | Leu | Thr | Phe | Gln | Gly | Leu | Gly | Ala | 170 | 175 | 180 |
| Leu | Lys | Ser | Leu | Lys | Met | Gln | Arg | Asn | Gly | Val | Thr | Lys | Leu | Met | 185 | 190 | 195 |
| Asp | Gly | Ala | Phe | Trp | Gly | Leu | Ser | Asn | Met | Glu | Ile | Leu | Gln | Leu | 200 | 205 | 210 |
| Asp | His | Asn | Asn | Leu | Thr | Glu | Ile | Thr | Lys | Gly | Trp | Leu | Tyr | Gly | 215 | 220 | 225 |
| Leu | Leu | Met | Leu | Gln | Glu | Leu | His | Leu | Ser | Gln | Asn | Ala | Ile | Asn | 230 | 235 | 240 |
| Arg | Ile | Ser | Pro | Asp | Ala | Trp | Glu | Phe | Cys | Gln | Lys | Leu | Ser | Glu | 245 | 250 | 255 |
| Leu | Asp | Leu | Thr | Phe | Asn | His | Leu | Ser | Arg | Leu | Asp | Asp | Ser | Ser | 260 | 265 | 270 |
| Phe | Leu | Gly | Leu | Ser | Leu | Leu | Asn | Thr | Leu | His | Ile | Gly | Asn | Asn | 275 | 280 | 285 |
| Arg | Val | Ser | Tyr | Ile | Ala | Asp | Cys | Ala | Phe | Arg | Gly | Leu | Ser | Ser | | | |

| | | |
|---|-----|-----|
| 290 | 295 | 300 |
| Leu Lys Thr Leu Asp Leu Lys Asn Asn Glu Ile Ser Trp Thr Ile | | |
| 305 | 310 | 315 |
| Glu Asp Met Asn Gly Ala Phe Ser Gly Leu Asp Lys Leu Arg Arg | | |
| 320 | 325 | 330 |
| Leu Ile Leu Gln Gly Asn Arg Ile Arg Ser Ile Thr Lys Lys Ala | | |
| 335 | 340 | 345 |
| Phe Thr Gly Leu Asp Ala Leu Glu His Leu Asp Leu Ser Asp Asn | | |
| 350 | 355 | 360 |
| Ala Ile Met Ser Leu Gln Gly Asn Ala Phe Ser Gln Met Lys Lys | | |
| 365 | 370 | 375 |
| Leu Gln Gln Leu His Leu Asn Thr Ser Ser Leu Leu Cys Asp Cys | | |
| 380 | 385 | 390 |
| Gln Leu Lys Trp Leu Pro Gln Trp Val Ala Glu Asn Asn Phe Gln | | |
| 395 | 400 | 405 |
| Ser Phe Val Asn Ala Ser Cys Ala His Pro Gln Leu Leu Lys Gly | | |
| 410 | 415 | 420 |
| Arg Ser Ile Phe Ala Val Ser Pro Asp Gly Phe Val Cys Asp Asp | | |
| 425 | 430 | 435 |
| Phe Pro Lys Pro Gln Ile Thr Val Gln Pro Glu Thr Gln Ser Ala | | |
| 440 | 445 | 450 |
| Ile Lys Gly Ser Asn Leu Ser Phe Ile Cys Ser Ala Ala Ser Ser | | |
| 455 | 460 | 465 |
| Ser Asp Ser Pro Met Thr Phe Ala Trp Lys Lys Asp Asn Glu Leu | | |
| 470 | 475 | 480 |
| Leu His Asp Ala Glu Met Glu Asn Tyr Ala His Leu Arg Ala Gln | | |
| 485 | 490 | 495 |
| Gly Gly Glu Val Met Glu Tyr Thr Thr Ile Leu Arg Leu Arg Glu | | |
| 500 | 505 | 510 |
| Val Glu Phe Ala Ser Glu Gly Lys Tyr Gln Cys Val Ile Ser Asn | | |
| 515 | 520 | 525 |
| His Phe Gly Ser Ser Tyr Ser Val Lys Ala Lys Leu Thr Val Asn | | |
| 530 | 535 | 540 |
| Met Leu Pro Ser Phe Thr Lys Thr Pro Met Asp Leu Thr Ile Arg | | |
| 545 | 550 | 555 |

| | | |
|-----------------|---------------------|-------------------------|
| Ala Gly Ala Met | Ala Arg Leu Glu Cys | Ala Ala Val Gly His Pro |
| 560 | 565 | 570 |
| Ala Pro Gln Ile | Ala Trp Gln Lys Asp | Gly Gly Thr Asp Phe Pro |
| 575 | 580 | 585 |
| Ala Ala Arg Glu | Arg Arg Met His Val | Met Pro Glu Asp Asp Val |
| 590 | 595 | 600 |
| Phe Phe Ile Val | Asp Val Lys Ile Glu | Asp Ile Gly Val Tyr Ser |
| 605 | 610 | 615 |
| Cys Thr Ala Gln | Asn Ser Ala Gly Ser | Ile Ser Ala Asn Ala Thr |
| 620 | 625 | 630 |
| Leu Thr Val Leu | Glu Thr Pro Ser Phe | Leu Arg Pro Leu Leu Asp |
| 635 | 640 | 645 |
| Arg Thr Val Thr | Lys Gly Glu Thr Ala | Val Leu Gln Cys Ile Ala |
| 650 | 655 | 660 |
| Gly Gly Ser Pro | Pro Pro Lys Leu Asn | Trp Thr Lys Asp Asp Ser |
| 665 | 670 | 675 |
| Pro Leu Val Val | Thr Glu Arg His Phe | Phe Ala Ala Gly Asn Gln |
| 680 | 685 | 690 |
| Leu Leu Ile Ile | Val Asp Ser Asp Val | Ser Asp Ala Gly Lys Tyr |
| 695 | 700 | 705 |
| Thr Cys Glu Met | Ser Asn Thr Leu Gly | Thr Glu Arg Gly Asn Val |
| 710 | 715 | 720 |
| Arg Leu Ser Val | Ile Pro Thr Pro Thr | Cys Asp Ser Pro Gln Met |
| 725 | 730 | 735 |
| Thr Ala Pro Ser | Leu Asp Asp Asp Gly | Trp Ala Thr Val Gly Val |
| 740 | 745 | 750 |
| Val Ile Ile Ala | Val Val Cys Cys Val | Val Gly Thr Ser Leu Val |
| 755 | 760 | 765 |
| Trp Val Val Ile | Ile Tyr His Thr Arg | Arg Arg Asn Glu Asp Cys |
| 770 | 775 | 780 |
| Ser Ile Thr Asn | Thr Asp Glu Thr Asn | Leu Pro Ala Asp Ile Pro |
| 785 | 790 | 795 |
| Ser Tyr Leu Ser | Ser Gln Gly Thr Leu | Ala Asp Arg Gln Asp Gly |
| 800 | 805 | 810 |

Tyr Val Ser Ser Glu Ser Gly Ser His His Gln Phe Val Thr Ser
 815 820 825
 Ser Gly Ala Gly Phe Phe Leu Pro Gln His Asp Ser Ser Gly Thr
 830 835 840
 Cys His Ile Asp Asn Ser Ser Glu Ala Asp Val Glu Ala Ala Thr
 845 850 855
 Asp Leu Phe Leu Cys Pro Phe Leu Gly Ser Thr Gly Pro Met Tyr
 860 865 870
 Leu Lys Gly Asn Val Tyr Gly Ser Asp Pro Phe Glu Thr Tyr His
 875 880 885
 Thr Gly Cys Ser Pro Asp Pro Arg Thr Val Leu Met Asp His Tyr
 890 895 900
 Glu Pro Ser Tyr Ile Lys Lys Lys Glu Cys Tyr Pro Cys Ser His
 905 910 915
 Pro Ser Glu Glu Ser Cys Glu Arg Ser Phe Ser Asn Ile Ser Trp
 920 925 930
 Pro Ser His Val Arg Lys Leu Leu Asn Thr Ser Tyr Ser His Asn
 935 940 945
 Glu Gly Pro Gly Met Lys Asn Leu Cys Leu Asn Lys Ser Ser Leu
 950 955 960
 Asp Phe Ser Ala Asn Pro Glu Pro Ala Ser Val Ala Ser Ser Asn
 965 970 975
 Ser Phe Met Gly Thr Phe Gly Lys Ala Leu Arg Arg Pro His Leu
 980 985 990
 Asp Ala Tyr Ser Ser Phe Gly Gln Pro Ser Asp Cys Gln Pro Arg
 995 1000 1005
 Ala Phe Tyr Leu Lys Ala His Ser Ser Pro Asp Leu Asp Ser Gly
 1010 1015 1020
 Ser Glu Glu Asp Gly Lys Glu Arg Thr Asp Phe Gln Glu Glu Asn
 1025 1030 1035
 His Ile Cys Thr Phe Lys Gln Thr Leu Glu Asn Tyr Arg Thr Pro
 1040 1045 1050
 Asn Phe Gln Ser Tyr Asp Leu Asp Thr
 1055

<210> 291
 <211> 2906

| | | | | | |
|------------|------------|------------|------------|------------|------|
| ggggagagga | attgaccatg | taaaaggaga | cttttttttt | tggtggtggt | 50 |
| ggctgttggg | tgccttgcaa | aaatgaagga | tgcaggacgc | agctttctcc | 100 |
| tggaaccgaa | cgcaatggat | aaactgattg | tgcaagagag | aaggaagaac | 150 |
| gaagcttttt | cttgtgagcc | ctggatctta | acacaaatgt | gtatatgtgc | 200 |
| acacagggag | cattcaagaa | tgaataaac | cagagttaga | ccgcgggggg | 250 |
| ttggtgtggt | ctgacataaa | taaataatct | taaagcagct | gttcccctcc | 300 |
| ccacccccaa | aaaaaaggat | gattggaaat | gaagaaccga | ggattcacia | 350 |
| agaaaaaagt | atgttcattt | ttctctataa | aggagaaagt | gagccaagga | 400 |
| gatatttttg | gaatgaaaag | tttggggctt | ttttagtaaa | gtaaagaact | 450 |
| ggtgtggtgg | tgttttcctt | tctttttgaa | tttcccacia | gaggagagga | 500 |
| aattaataat | acatctgcaa | agaaatttca | gagaagaaaa | gttgaccgcg | 550 |
| gcagattgag | gcattgattg | ggggagagaa | accagcagag | cacagttgga | 600 |
| tttgtgccta | tgttgactaa | aattgacgga | taattgcagt | tggatttttc | 650 |
| ttcatcaacc | tccttttttt | taaattttta | ttccttttgg | tatcaagatc | 700 |
| atgcgttttc | tcttgttctt | aaccacctgg | atttccatct | ggatgttgct | 750 |
| gtgatcagtc | tgaataacaa | ctgtttgaat | tccagaagga | ccaacaccag | 800 |
| ataaattatg | aatgttgaac | aagatgacct | tacatccaca | gcagataatg | 850 |
| ataggtccta | ggtttaacag | ggccctattt | gaccccttgc | ttgtggtgct | 900 |
| gctggctctt | caacttcttg | tggtggctgg | tctggtgcgg | gctcagacct | 950 |
| gcccttctgt | gtgctcctgc | agcaaccagt | tcagcaaggt | gatttgtgtt | 1000 |
| cggaaaaacc | tgctgaggt | tccgatggc | atctccacca | acacacggct | 1050 |
| gctgaacctc | catgagaacc | aatccagat | catcaaagtg | aacagcttca | 1100 |
| agcacttgag | gcacttgga | atcctacagt | tgagtaggaa | ccatatcaga | 1150 |
| accattgaaa | ttggggcttt | caatggtctg | gcgaacctca | acactctgga | 1200 |
| actctttgac | aatcgtctta | ctaccatccc | gaatggagct | tttgtatact | 1250 |

catggaaagc cacctgccca tgcctgctat cgagcatgag cacctaaatc 2600
 actataactc atacaaatct cccttcaacc acacaacaac agttaacaca 2650
 ataaattcaa tacacagttc agtgcatgaa ccggttattga tccgaatgaa 2700
 ctctaaagac aatgtacaag agactcaaat ctaaaacatt tacagagtta 2750
 caaaaaacaa acaatcaaaa aaaaagacag tttattaaaa atgacacaaa 2800
 tgactgggct aaatctactg tttcaaaaaa gtgtctttac aaaaaaacia 2850
 aaaagaaaag aaatttattt attaaaaatt ctattgtgat ctaaagcaga 2900
 caaaaa 2906

<210> 292

<211> 640

<212> PRT

<213> Homo Sapien

<400> 292

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Asn | Lys | Met | Thr | Leu | His | Pro | Gln | Gln | Ile | Met | Ile | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Pro | Arg | Phe | Asn | Arg | Ala | Leu | Phe | Asp | Pro | Leu | Leu | Val | Val | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Ala | Leu | Gln | Leu | Leu | Val | Val | Ala | Gly | Leu | Val | Arg | Ala | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Cys | Pro | Ser | Val | Cys | Ser | Cys | Ser | Asn | Gln | Phe | Ser | Lys | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ile | Cys | Val | Arg | Lys | Asn | Leu | Arg | Glu | Val | Pro | Asp | Gly | Ile | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Asn | Thr | Arg | Leu | Leu | Asn | Leu | His | Glu | Asn | Gln | Ile | Gln | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Lys | Val | Asn | Ser | Phe | Lys | His | Leu | Arg | His | Leu | Glu | Ile | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gln | Leu | Ser | Arg | Asn | His | Ile | Arg | Thr | Ile | Glu | Ile | Gly | Ala | Phe |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Gly | Leu | Ala | Asn | Leu | Asn | Thr | Leu | Glu | Leu | Phe | Asp | Asn | Arg |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Thr | Thr | Ile | Pro | Asn | Gly | Ala | Phe | Val | Tyr | Leu | Ser | Lys | Leu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Glu | Leu | Trp | Leu | Arg | Asn | Asn | Pro | Ile | Glu | Ser | Ile | Pro | Ser |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 155 | | 160 | | 165 |
| Tyr Ala Phe Asn Arg Ile Pro Ser Leu Arg Arg Leu Asp Leu Gly | 170 | | 175 | | 180 |
| Glu Leu Lys Arg Leu Ser Tyr Ile Ser Glu Gly Ala Phe Glu Gly | 185 | | 190 | | 195 |
| Leu Ser Asn Leu Arg Tyr Leu Asn Leu Ala Met Cys Asn Leu Arg | 200 | | 205 | | 210 |
| Glu Ile Pro Asn Leu Thr Pro Leu Ile Lys Leu Asp Glu Leu Asp | 215 | | 220 | | 225 |
| Leu Ser Gly Asn His Leu Ser Ala Ile Arg Pro Gly Ser Phe Gln | 230 | | 235 | | 240 |
| Gly Leu Met His Leu Gln Lys Leu Trp Met Ile Gln Ser Gln Ile | 245 | | 250 | | 255 |
| Gln Val Ile Glu Arg Asn Ala Phe Asp Asn Leu Gln Ser Leu Val | 260 | | 265 | | 270 |
| Glu Ile Asn Leu Ala His Asn Asn Leu Thr Leu Leu Pro His Asp | 275 | | 280 | | 285 |
| Leu Phe Thr Pro Leu His His Leu Glu Arg Ile His Leu His His | 290 | | 295 | | 300 |
| Asn Pro Trp Asn Cys Asn Cys Asp Ile Leu Trp Leu Ser Trp Trp | 305 | | 310 | | 315 |
| Ile Lys Asp Met Ala Pro Ser Asn Thr Ala Cys Cys Ala Arg Cys | 320 | | 325 | | 330 |
| Asn Thr Pro Pro Asn Leu Lys Gly Arg Tyr Ile Gly Glu Leu Asp | 335 | | 340 | | 345 |
| Gln Asn Tyr Phe Thr Cys Tyr Ala Pro Val Ile Val Glu Pro Pro | 350 | | 355 | | 360 |
| Ala Asp Leu Asn Val Thr Glu Gly Met Ala Ala Glu Leu Lys Cys | 365 | | 370 | | 375 |
| Arg Ala Ser Thr Ser Leu Thr Ser Val Ser Trp Ile Thr Pro Asn | 380 | | 385 | | 390 |
| Gly Thr Val Met Thr His Gly Ala Tyr Lys Val Arg Ile Ala Val | 395 | | 400 | | 405 |
| Leu Ser Asp Gly Thr Leu Asn Phe Thr Asn Val Thr Val Gln Asp | 410 | | 415 | | 420 |

| | | | |
|-----------------|-----------------|-----------------|-------------|
| Thr Gly Met Tyr | Thr Cys Met Val | Ser Asn Ser Val | Gly Asn Thr |
| 425 | | 430 | 435 |
| Thr Ala Ser Ala | Thr Leu Asn Val | Thr Ala Ala Thr | Thr Thr Pro |
| 440 | | 445 | 450 |
| Phe Ser Tyr Phe | Ser Thr Val Thr | Val Glu Thr Met | Glu Pro Ser |
| 455 | | 460 | 465 |
| Gln Asp Glu Ala | Arg Thr Thr Asp | Asn Asn Val Gly | Pro Thr Pro |
| 470 | | 475 | 480 |
| Val Val Asp Trp | Glu Thr Thr Asn | Val Thr Thr Ser | Leu Thr Pro |
| 485 | | 490 | 495 |
| Gln Ser Thr Arg | Ser Thr Glu Lys | Thr Phe Thr Ile | Pro Val Thr |
| 500 | | 505 | 510 |
| Asp Ile Asn Ser | Gly Ile Pro Gly | Ile Asp Glu Val | Met Lys Thr |
| 515 | | 520 | 525 |
| Thr Lys Ile Ile | Ile Gly Cys Phe | Val Ala Ile Thr | Leu Met Ala |
| 530 | | 535 | 540 |
| Ala Val Met Leu | Val Ile Phe Tyr | Lys Met Arg Lys | Gln His His |
| 545 | | 550 | 555 |
| Arg Gln Asn His | His Ala Pro Thr | Arg Thr Val Glu | Ile Ile Asn |
| 560 | | 565 | 570 |
| Val Asp Asp Glu | Ile Thr Gly Asp | Thr Pro Met Glu | Ser His Leu |
| 575 | | 580 | 585 |
| Pro Met Pro Ala | Ile Glu His Glu | His Leu Asn His | Tyr Asn Ser |
| 590 | | 595 | 600 |
| Tyr Lys Ser Pro | Phe Asn His Thr | Thr Thr Val Asn | Thr Ile Asn |
| 605 | | 610 | 615 |
| Ser Ile His Ser | Ser Val His Glu | Pro Leu Leu Ile | Arg Met Asn |
| 620 | | 625 | 630 |
| Ser Lys Asp Asn | Val Gln Glu Thr | Gln Ile | |
| 635 | | 640 | |

<210> 293

<211> 4053

<212> DNA

<213> Homo Sapien

<400> 293

agccgacgct gctcaagctg caactctgtt gcagttggca gttcttttcg 50

| | | | | | |
|------------|------------|------------|------------|------------|------|
| gtttccctcc | tgtgttttgg | gggcatgaaa | gggcttcgcc | gccgggagta | 100 |
| aaagaaggaa | ttgaccgggc | agcgcgaggg | aggagcgcgc | acgcgaccgc | 150 |
| gagggcgggc | gtgcaccctc | ggctggaagt | ttgtgccggg | ccccgagcgc | 200 |
| gcgccggctg | ggagcttcgg | gtagagacct | aggccgctgg | accgcgatga | 250 |
| gcgcgccgag | cctccgtgcg | cgcgccgcgg | ggttggggct | gctgctgtgc | 300 |
| gcggtgctgg | ggcgcgctgg | ccggtccgac | agcggcggtc | gcggggaact | 350 |
| cgggcagccc | tctggggtag | ccgccgagcg | cccatgcccc | actacctgcc | 400 |
| gctgcctcgg | ggacctgctg | gactgcagtc | gtaagcggct | agcgcgtctt | 450 |
| cccgagccac | tcccgtcctg | ggtcgctcgg | ctggacttaa | gtcacaacag | 500 |
| attatctttc | atcaaggcaa | gttccatgag | ccaccttcaa | agccttcgag | 550 |
| aagtgaaact | gaacaacaat | gaattggaga | ccattccaaa | tctgggacca | 600 |
| gtctcggcaa | atattacact | tctctccttg | gctggaaaca | ggattgttga | 650 |
| aatactccct | gaacatctga | aagagtttca | gtcccttgaa | actttggacc | 700 |
| ttagcagcaa | caatatttca | gagctccaaa | ctgcatttcc | agccctacag | 750 |
| ctcaaatatc | tgtatctcaa | cagcaaccga | gtcacatcaa | tggaacctgg | 800 |
| gtattttgac | aatttggcc | acacactcct | tgtgttaaag | ctgaacagga | 850 |
| accgaatctc | agctatccca | cccaagatgt | ttaaactgcc | ccaactgcaa | 900 |
| catctcgaat | tgaaccgaaa | caagattaaa | aatgtagatg | gactgacatt | 950 |
| ccaaggcctt | ggtgctctga | agtctctgaa | aatgcaaaga | aatggagtaa | 1000 |
| cgaaacttat | ggatggagct | ttttgggggc | tgagcaacat | ggaaattttg | 1050 |
| cagctggacc | ataacaacct | aacagagatt | accaaaggct | ggctttacgg | 1100 |
| cttgctgatg | ctgcaggaa | ttcatctcag | ccaaaatgcc | atcaacagga | 1150 |
| tcagccctga | tgctggggag | ttctgccaga | agctcagtga | gctggacct | 1200 |
| actttcaatc | acttatcaag | gttagatgat | tcaagcttcc | ttggcctaag | 1250 |
| cttactaaat | acactgcaca | ttgggaacaa | cagagtcagc | tacattgctg | 1300 |
| attgtgcctt | ccgggggctt | tccagtttaa | agactttgga | tctgaagaac | 1350 |

aatgaaatth cctggactat tgaagacatg aatgggtgctt tctctgggct 1400
tgacaaaactg aggcgactga tactccaagg aaatcggatc cgttctatta 1450
ctaaaaaagc cttcactggg ttggatgcat tggagcatct agacctgagt 1500
gacaacgcaa tcatgtcttt acaaggcaat gcattttcac aaatgaagaa 1550
actgcaacaa ttgcatttaa atacatcaag ccttttgtgc gattgccagc 1600
taaaatggct cccacagtgg gtggcgga aaactttca gagctttgta 1650
aatgccagtt gtgcccattc tcagctgcta aaaggaagaa gcatttttgc 1700
tgtagccca gatggctttg tgtgtgatga ttttcccaa cccagatca 1750
cggttcagcc agaaacacag tcggcaataa aaggttcaa tttgagtttc 1800
atctgctcag ctgccagcag cagtgaattc ccaatgactt ttgcttggaa 1850
aaaagacaat gaactactgc atgatgctga aatggaaaat tatgcacacc 1900
tccgggccc aagtgggcag gtgatggagt ataccaccat ccttcggctg 1950
cgcgaggtgg aatttgccag tgaggggaaa tatcagtgtg tcatctcaa 2000
tcactttggg tcactctact ctgtcaaagc caagcttaca gtaaatatgc 2050
ttccctcatt caccaagacc cccatggatc tcaccatccg agctggggcc 2100
atggcacgct tggagtgtgc tgctgtgggg caccagccc cccagatagc 2150
ctggcagaag gatgggggca cagacttccc agctgcacgg gagagacgca 2200
tgcatgtgat gcccaggat gacgtgttct ttatcgtgga tgtgaagata 2250
gaggacattg gggatatacag ctgcacagct cagaacagtg caggaagtat 2300
ttcagcaaat gcaactctga ctgtcctaga aacaccatca tttttgcggc 2350
cactgttgga ccgaactgta accaaggag aaacagccgt cctacagtgc 2400
attgctggag gaagccctcc ccctaaactg aactggacca aagatgatag 2450
cccattggtg gtaaccgaga ggcacttttt tgcagcaggc aatcagcttc 2500
tgattattgt ggactcagat gtcagtgatg ctgggaaata cacatgtgag 2550
atgtctaaca cccttggcac tgagagagga aacgtgcgcc tcagtgtgat 2600
cccactcca acctgcgact ccctcagat gacagcccca tcgttagacg 2650
atgacggatg ggccactgtg ggtgtcgtga tcatagccgt ggtttgctgt 2700

gtggtgggca cgtcactcgt gtgggtgggc atcatatacc acacaaggcg 2750
 gaggaatgaa gattgcagca ttaccaacac agatgagacc aacttgccag 2800
 cagatattcc tagttatttg tcatctcagg gaacgttagc tgacaggcag 2850
 gatgggtacg tgtcttcaga aagtggaagc caccaccagt ttgtcacatc 2900
 ttcagggtgct ggatttttct taccacaaca tgacagtagt gggacctgcc 2950
 atattgacaa tagcagtga gctgatgtgg aagctgccac agatctgttc 3000
 ctttgtccgt ttttgggatc cacaggccct atgtatttga agggaaatgt 3050
 gtatggctca gatccttttg aaacatatca tacaggttgc agtcctgacc 3100
 caagaacagt tttaatggac cactatgagc ccagttacat aaagaaaaag 3150
 gagtgtacc catgttctca tccttcagaa gaatcctgcg aacggagctt 3200
 cagtaatata tcgtggcctt cacatgtgag gaagctactt aacactagtt 3250
 actctcacia tgaaggacct ggaatgaaaa atctgtgtct aaacaagtcc 3300
 tcttttagatt ttagtgcaaa tccagagcca gcgtcggttg cctcgagtaa 3350
 ttctttcatg ggtacctttg gaaaagctct caggagacct cacctagatg 3400
 cctattcaag ctttggacag ccatcagatt gtcagccaag agccttttat 3450
 ttgaaagctc attcttcccc agacttggac tctgggtcag aggaagatgg 3500
 gaaagaaagg acagattttc aggaagaaaa tcacatttgt acctttaaac 3550
 agactttaga aaactacagg actccaaatt ttcagtctta tgacttggac 3600
 acatagactg aatgagacca aaggaaaagc ttaacatact acctcaagtg 3650
 aacttttatt taaaagagag agaatcttat gttttttaaa tggagttatg 3700
 aatttttaaaa ggataaaaaat gctttattta tacagatgaa ccaaaattac 3750
 aaaaagttat gaaaattttt atactgggaa tgatgctcat ataagaatac 3800
 ctttttaaac tattttttta ctttgtttta tgcaaaaaag tatcttacgt 3850
 aaattaatga tataaatcat gattattttta tgtattttta taatgccaga 3900
 tttcttttta tggaaaatga gttactaaag catttttaaat aataacctgcc 3950
 ttgtaccatt ttttaaatag aagttacttc attatatttt gcacattata 4000

tttaataaaa tgtgtcaatt tgaaaaaaaa aaaaaaaaaa aaaaaaaaaa 4050

aaa 4053

<210> 294

<211> 1119

<212> PRT

<213> Homo Sapien

<400> 294

Met Ser Ala Pro Ser Leu Arg Ala Arg Ala Ala Gly Leu Gly Leu
1 5 10 15

Leu Leu Cys Ala Val Leu Gly Arg Ala Gly Arg Ser Asp Ser Gly
20 25 30

Gly Arg Gly Glu Leu Gly Gln Pro Ser Gly Val Ala Ala Glu Arg
35 40 45

Pro Cys Pro Thr Thr Cys Arg Cys Leu Gly Asp Leu Leu Asp Cys
50 55 60

Ser Arg Lys Arg Leu Ala Arg Leu Pro Glu Pro Leu Pro Ser Trp
65 70 75

Val Ala Arg Leu Asp Leu Ser His Asn Arg Leu Ser Phe Ile Lys
80 85 90

Ala Ser Ser Met Ser His Leu Gln Ser Leu Arg Glu Val Lys Leu
95 100 105

Asn Asn Asn Glu Leu Glu Thr Ile Pro Asn Leu Gly Pro Val Ser
110 115 120

Ala Asn Ile Thr Leu Leu Ser Leu Ala Gly Asn Arg Ile Val Glu
125 130 135

Ile Leu Pro Glu His Leu Lys Glu Phe Gln Ser Leu Glu Thr Leu
140 145 150

Asp Leu Ser Ser Asn Asn Ile Ser Glu Leu Gln Thr Ala Phe Pro
155 160 165

Ala Leu Gln Leu Lys Tyr Leu Tyr Leu Asn Ser Asn Arg Val Thr
170 175 180

Ser Met Glu Pro Gly Tyr Phe Asp Asn Leu Ala Asn Thr Leu Leu
185 190 195

Val Leu Lys Leu Asn Arg Asn Arg Ile Ser Ala Ile Pro Pro Lys
200 205 210

Met Phe Lys Leu Pro Gln Leu Gln His Leu Glu Leu Asn Arg Asn

| | | |
|-------------------------------------|-------------------------|-----|
| 215 | 220 | 225 |
| Lys Ile Lys Asn Val Asp Gly Leu Thr | Phe Gln Gly Leu Gly Ala | |
| 230 | 235 | 240 |
| Leu Lys Ser Leu Lys Met Gln Arg Asn | Gly Val Thr Lys Leu Met | |
| 245 | 250 | 255 |
| Asp Gly Ala Phe Trp Gly Leu Ser Asn | Met Glu Ile Leu Gln Leu | |
| 260 | 265 | 270 |
| Asp His Asn Asn Leu Thr Glu Ile Thr | Lys Gly Trp Leu Tyr Gly | |
| 275 | 280 | 285 |
| Leu Leu Met Leu Gln Glu Leu His Leu | Ser Gln Asn Ala Ile Asn | |
| 290 | 295 | 300 |
| Arg Ile Ser Pro Asp Ala Trp Glu Phe | Cys Gln Lys Leu Ser Glu | |
| 305 | 310 | 315 |
| Leu Asp Leu Thr Phe Asn His Leu Ser | Arg Leu Asp Asp Ser Ser | |
| 320 | 325 | 330 |
| Phe Leu Gly Leu Ser Leu Leu Asn Thr | Leu His Ile Gly Asn Asn | |
| 335 | 340 | 345 |
| Arg Val Ser Tyr Ile Ala Asp Cys Ala | Phe Arg Gly Leu Ser Ser | |
| 350 | 355 | 360 |
| Leu Lys Thr Leu Asp Leu Lys Asn Asn | Glu Ile Ser Trp Thr Ile | |
| 365 | 370 | 375 |
| Glu Asp Met Asn Gly Ala Phe Ser Gly | Leu Asp Lys Leu Arg Arg | |
| 380 | 385 | 390 |
| Leu Ile Leu Gln Gly Asn Arg Ile Arg | Ser Ile Thr Lys Lys Ala | |
| 395 | 400 | 405 |
| Phe Thr Gly Leu Asp Ala Leu Glu His | Leu Asp Leu Ser Asp Asn | |
| 410 | 415 | 420 |
| Ala Ile Met Ser Leu Gln Gly Asn Ala | Phe Ser Gln Met Lys Lys | |
| 425 | 430 | 435 |
| Leu Gln Gln Leu His Leu Asn Thr Ser | Ser Leu Leu Cys Asp Cys | |
| 440 | 445 | 450 |
| Gln Leu Lys Trp Leu Pro Gln Trp Val | Ala Glu Asn Asn Phe Gln | |
| 455 | 460 | 465 |
| Ser Phe Val Asn Ala Ser Cys Ala His | Pro Gln Leu Leu Lys Gly | |
| 470 | 475 | 480 |

| | | | |
|---|-----|-----|-----|
| Arg Ser Ile Phe Ala Val Ser Pro Asp Gly Phe Val Cys Asp Asp | 485 | 490 | 495 |
| Phe Pro Lys Pro Gln Ile Thr Val Gln Pro Glu Thr Gln Ser Ala | 500 | 505 | 510 |
| Ile Lys Gly Ser Asn Leu Ser Phe Ile Cys Ser Ala Ala Ser Ser | 515 | 520 | 525 |
| Ser Asp Ser Pro Met Thr Phe Ala Trp Lys Lys Asp Asn Glu Leu | 530 | 535 | 540 |
| Leu His Asp Ala Glu Met Glu Asn Tyr Ala His Leu Arg Ala Gln | 545 | 550 | 555 |
| Gly Gly Glu Val Met Glu Tyr Thr Thr Ile Leu Arg Leu Arg Glu | 560 | 565 | 570 |
| Val Glu Phe Ala Ser Glu Gly Lys Tyr Gln Cys Val Ile Ser Asn | 575 | 580 | 585 |
| His Phe Gly Ser Ser Tyr Ser Val Lys Ala Lys Leu Thr Val Asn | 590 | 595 | 600 |
| Met Leu Pro Ser Phe Thr Lys Thr Pro Met Asp Leu Thr Ile Arg | 605 | 610 | 615 |
| Ala Gly Ala Met Ala Arg Leu Glu Cys Ala Ala Val Gly His Pro | 620 | 625 | 630 |
| Ala Pro Gln Ile Ala Trp Gln Lys Asp Gly Gly Thr Asp Phe Pro | 635 | 640 | 645 |
| Ala Ala Arg Glu Arg Arg Met His Val Met Pro Glu Asp Asp Val | 650 | 655 | 660 |
| Phe Phe Ile Val Asp Val Lys Ile Glu Asp Ile Gly Val Tyr Ser | 665 | 670 | 675 |
| Cys Thr Ala Gln Asn Ser Ala Gly Ser Ile Ser Ala Asn Ala Thr | 680 | 685 | 690 |
| Leu Thr Val Leu Glu Thr Pro Ser Phe Leu Arg Pro Leu Leu Asp | 695 | 700 | 705 |
| Arg Thr Val Thr Lys Gly Glu Thr Ala Val Leu Gln Cys Ile Ala | 710 | 715 | 720 |
| Gly Gly Ser Pro Pro Pro Lys Leu Asn Trp Thr Lys Asp Asp Ser | 725 | 730 | 735 |
| Pro Leu Val Val Thr Glu Arg His Phe Phe Ala Ala Gly Asn Gln | 740 | 745 | 750 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Leu | Leu | Ile | Ile | Val | Asp | Ser | Asp | Val | Ser | Asp | Ala | Gly | Lys | Tyr | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Thr | Cys | Glu | Met | Ser | Asn | Thr | Leu | Gly | Thr | Glu | Arg | Gly | Asn | Val | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Arg | Leu | Ser | Val | Ile | Pro | Thr | Pro | Thr | Cys | Asp | Ser | Pro | Gln | Met | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Thr | Ala | Pro | Ser | Leu | Asp | Asp | Asp | Gly | Trp | Ala | Thr | Val | Gly | Val | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| Val | Ile | Ile | Ala | Val | Val | Cys | Cys | Val | Val | Gly | Thr | Ser | Leu | Val | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Trp | Val | Val | Ile | Ile | Tyr | His | Thr | Arg | Arg | Arg | Asn | Glu | Asp | Cys | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Ser | Ile | Thr | Asn | Thr | Asp | Glu | Thr | Asn | Leu | Pro | Ala | Asp | Ile | Pro | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Ser | Tyr | Leu | Ser | Ser | Gln | Gly | Thr | Leu | Ala | Asp | Arg | Gln | Asp | Gly | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Tyr | Val | Ser | Ser | Glu | Ser | Gly | Ser | His | His | Gln | Phe | Val | Thr | Ser | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Ser | Gly | Ala | Gly | Phe | Phe | Leu | Pro | Gln | His | Asp | Ser | Ser | Gly | Thr | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
| Cys | His | Ile | Asp | Asn | Ser | Ser | Glu | Ala | Asp | Val | Glu | Ala | Ala | Thr | |
| | | | | 905 | | | | | 910 | | | | | 915 | |
| Asp | Leu | Phe | Leu | Cys | Pro | Phe | Leu | Gly | Ser | Thr | Gly | Pro | Met | Tyr | |
| | | | | 920 | | | | | 925 | | | | | 930 | |
| Leu | Lys | Gly | Asn | Val | Tyr | Gly | Ser | Asp | Pro | Phe | Glu | Thr | Tyr | His | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Thr | Gly | Cys | Ser | Pro | Asp | Pro | Arg | Thr | Val | Leu | Met | Asp | His | Tyr | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Glu | Pro | Ser | Tyr | Ile | Lys | Lys | Lys | Glu | Cys | Tyr | Pro | Cys | Ser | His | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Pro | Ser | Glu | Glu | Ser | Cys | Glu | Arg | Ser | Phe | Ser | Asn | Ile | Ser | Trp | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Pro | Ser | His | Val | Arg | Lys | Leu | Leu | Asn | Thr | Ser | Tyr | Ser | His | Asn | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Glu | Gly | Pro | Gly | Met | Lys | Asn | Leu | Cys | Leu | Asn | Lys | Ser | Ser | Leu | |

| 1010 | 1015 | 1020 |
|---|------|------|
| Asp Phe Ser Ala Asn Pro Glu Pro Ala Ser Val Ala Ser Ser Asn | | |
| 1025 | 1030 | 1035 |
| Ser Phe Met Gly Thr Phe Gly Lys Ala Leu Arg Arg Pro His Leu | | |
| 1040 | 1045 | 1050 |
| Asp Ala Tyr Ser Ser Phe Gly Gln Pro Ser Asp Cys Gln Pro Arg | | |
| 1055 | 1060 | 1065 |
| Ala Phe Tyr Leu Lys Ala His Ser Ser Pro Asp Leu Asp Ser Gly | | |
| 1070 | 1075 | 1080 |
| Ser Glu Glu Asp Gly Lys Glu Arg Thr Asp Phe Gln Glu Glu Asn | | |
| 1085 | 1090 | 1095 |
| His Ile Cys Thr Phe Lys Gln Thr Leu Glu Asn Tyr Arg Thr Pro | | |
| 1100 | 1105 | 1110 |
| Asn Phe Gln Ser Tyr Asp Leu Asp Thr | | |
| 1115 | | |

<210> 295

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 295

ggaaccgaat ctcagcta 18

<210> 296

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 296

cctaaactga actggacca 19

<210> 297

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 297
ggctggagac actgaacct 19

<210> 298
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 298
acagctgcac agctcagaac agtg 24

<210> 299

<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 299
cattcccagt ataaaaattt tc 22

<210> 300
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 300
gggtcttggt gaatgagg 18

<210> 301
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 301
gtgcctctcg gttaccacca atgg 24

<210> 302
<211> 50
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 302

gcggccactg ttggaccgaa ctgtaaccaa gggagaaaca gccgtcctac 50

<210> 303

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 303

gcctttgaca accttcagtc actagtgg 28

<210> 304

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 304

cccatgtgt ccatgactgt tccc 24

<210> 305

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 305

tactgcctca tgacctcttc actcccttgc atcatcttag agcgg 45

<210> 306

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 306

actccaagga aatcgatcc gttc 24

<210> 307

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 307

ttagcagctg aggatgggca caac 24

<210> 308

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 308

actccaagga aatcgatcc gttc 24

<210> 309

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 309

gccttcactg gtttggatgc attggagcat ctagacctga gtgacaacgc 50

<210> 310

<211> 3296

<212> DNA

<213> Homo Sapien

<400> 310

caaaacttgc gtcgcggaga gcgcccagct tgacttgaat ggaaggagcc 50

cgagcccgcg gagcgcagct gagactgggg gagcgcgttc ggctgtggg 100

gcgcccgtcg gcgcccgggc gcagcaggga aggggaagct gtggtctgcc 150

ctgctccacg aggcgccact ggtgtgaacc gggagagccc ctgggtggtc 200

ccgtccccta tccctccttt atatagaaac cttccacact gggaaaggcag 250

cggcgaggca ggagggctca tggtagcaa ggaggccggc tgatctgcag 300

gcgcacagca ttccgagttt acagattttt acagatacca aatggaaggc 350

gaggaggcag aacagcctgc ctggttccat cagccctggc gccagggcgc 400

gccttcgcga agctgcgcct gctgcgctcg ctggacctgt cgggcaaccg 1750
 gctgcacacg ctgccacctg ggctgcctcg aaatgtccat gtgctgaagg 1800
 tcaagcgcaa tgagctggct gccttggcac gaggggctcg ggcgggcatg 1850
 gctcagctgc gtgagctgta cctcaccagc aaccgactgc gcagccgagc 1900
 cctgggcccc cgtgcctggg tggacctcgc ccatctgcag ctgctggaca 1950
 tcgcccggaa tcagctcaca gagatccccg aggggctccc cgagtcactt 2000
 gagtacctgt acctgcagaa caacaagatt agtgcggtgc ccgccaatgc 2050
 cttcgactcc acgccccacc tcaaggggat ctttctcagg tttacaagc 2100
 tggctgtggg ctccgtggtg gacagtgcct tccggaggct gaagcacctg 2150
 caggtcttgg acattgaagg caacttagag tttggtgaca tttccaagga 2200
 ccgtggccgc ttggggaagg aaaaggagga ggaggaagag gaggaggagg 2250
 aggaagagga aacaagatag tgacaagggtg atgcagatgt gacctaggat 2300
 gatggaccgc cggactcttt tctgcagcac acgcctgtgt gctgtgagcc 2350
 cccactctg ccgtgctcac acagacacac ccagctgcac acatgaggca 2400
 tcccacatga cacgggctga cacagtctca tatccccacc cttccccacg 2450
 gcgtgtccca cggccagaca catgcacaca catcacaccc tcaaaccacc 2500
 agctcagcca cacacaacta cctccaaac caccacagtc tctgtcacac 2550
 cccactacc gctgccacgc cctctgaatc atgcaggga gggctctgcc 2600
 ctgccctggc acacacaggc acccattccc tccccctgct gacatgtgta 2650
 tgcgatatga tacacaccac acacacacac atgcacaagt catgtgcgaa 2700
 cagccctcca aagcctatgc cacagacagc tcttgcccca gccagaatca 2750
 gccatagcag ctgcgctct gccctgtcca tctgtccgtc cgttccctgg 2800
 agaagacaca agggatatca tgctctgtgg ccagggtgcct gccaccctct 2850
 ggaactcaca aaagctggct ttatttctt tccatccta tggggacagg 2900
 agccttcagg actgctggcc tggcctggcc caccctgctc ctccagggtc 2950
 tgggcagtca ctctgctaag agtccctccc tgccacgccc tggcaggaca 3000
 caggcacttt tccaatgggc aagcccagtg gaggcaggat gggagagccc 3050

cctgggtgct gctggggcct tggggcagga gtgaagcaga ggtgatgggg 3100
 ctgggctgag ccagggagga aggaccagc tgcacctagg agacaccttt 3150
 gttcttcagg cctgtggggg aagttccggg tgcctttatt tttattctt 3200
 ttctaaggaa aaaaatgata aaaatctcaa agctgatttt tcttggtata 3250
 gaaaaactaa tataaaagca ttatccctat ccctgcaaaa aaaaaa 3296

<210> 311
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 311
 gcattggccg cgagactttg cc 22

<210> 312
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 312
 gcggccacgg tccttggaat tg 22

<210> 313
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 313
 tggaggagct caacctcagc tacaaccgca tcaccagccc acagg 45

<210> 314
 <211> 3003
 <212> DNA
 <213> Homo Sapien

<400> 314
 gggagggggc tccggggcgc gcgcagcaga cctgctccgg ccgcgcgcct 50
 cgccgctgtc ctccgggagc ggcagcagta gcccgggcgg cgagggctgg 100

gtggatggat cagggagaaa gacaatgact tgcactggga accaatcagg 1450
 gaccagcag gtggacaata tctgacagtg tcggcagcca aagccccagg 1500
 gggaaaagct gcacgcttgg tgctacctct cggccgcctc atgcattcag 1550
 gggacctgtg cctgtcattc aggcacaagg tgacggggct gcactctggc 1600
 acactccagg tgtttgtgag aaaacacggt gccacaggag cagccctgtg 1650
 gggaagaaat ggtggccatg gctggaggca aacacagatc accttgcgag 1700
 gggctgacat caagagcgaa tcacaaagat gattaaaggg ttggaaaaaa 1750
 agatctatga tggaaaatta aaggaactgg gattattgag cctggagaag 1800
 agaagactga ggggcaaacc attgatgggt ttcaagtata tgaagggttg 1850
 gcacagagag ggtggcgacc agctgttctc catatgcact aagaatagaa 1900
 caagagggaaa ctggcttaga ctagagtata agggagcatt tcttggcagg 1950
 ggccattgtt agaatacttc ataaaaaaag aagtgtgaaa atctcagtat 2000
 ctctctctct ttctaaaaaa ttagataaaa atttgtctat ttaagatgg 2050
 taaagatgtt cttacccaag gaaaagtaac aaattataga atttcccaa 2100
 agatgttttg atcctactag tagtatgcag tgaaaatctt tagaactaaa 2150
 taatttggac aaggcttaat ttaggcattt cctctctgac ctctaattgg 2200
 agagggattg aaaggggaag agcccaccaa atgctgagct cactgaaata 2250
 tctctccctt atggcaatcc tagcagtatt aaagaaaaaa ggaaactatt 2300
 tattccaaat gagagtatga tggacagata ttttagtatc tcagtaatgt 2350
 cctagtgtgg cggtggtttt caatgtttct tcatggtaaa ggtataagcc 2400
 tttcatttgt tcaatggatg atgtttcaga tttttttttt ttttaagagat 2450
 ctttcaagga acacagttca gagagatttt catcgggtgc attctctctg 2500
 cttcgtgtgt gacaagttat cttggctgct gagaaagagt gccctgcccc 2550
 acaccggcag acctttcctt cacctcatca gtatgattca gtttctctta 2600
 tcaattggac tctcccagg tccacagaac agtaatat tttgaacaat 2650
 aggtacaata gaaggtcttc tgtcatttaa cctggtaaag gcagggtgg 2700
 agggggaaaa taaatcatta agcctttgag taacggcaga atatatggct 2750

gtagatccat ttttaatggt tcatttcctt tatggtcata taactgcaca 2800
gctgaagatg aaaggggaaa ataaatgaaa attttacttt tcgatgccaa 2850
tgatacattg cactaaactg atggaagaag ttatccaaag tactgtataa 2900
catcttggtt attatttaat gttttctaaa ataaaaaatg ttagtggttt 2950
tccaaatggc ctaataaaaa caattatttg taaataaaaa cactgttagt 3000
aat 3003

<210> 315

<211> 509

<212> PRT

<213> Homo Sapien

<400> 315

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Asp | Phe | Leu | Leu | Ala | Leu | Val | Leu | Val | Ser | Ser | Leu | Tyr | Leu | 1 | 5 | 10 | 15 |
| Gln | Ala | Ala | Ala | Glu | Phe | Asp | Gly | Arg | Trp | Pro | Arg | Gln | Ile | Val | 20 | 25 | 30 | |
| Ser | Ser | Ile | Gly | Leu | Cys | Arg | Tyr | Gly | Gly | Arg | Ile | Asp | Cys | Cys | 35 | 40 | 45 | |
| Trp | Gly | Trp | Ala | Arg | Gln | Ser | Trp | Gly | Gln | Cys | Gln | Pro | Val | Cys | 50 | 55 | 60 | |
| Gln | Pro | Arg | Cys | Lys | His | Gly | Glu | Cys | Ile | Gly | Pro | Asn | Lys | Cys | 65 | 70 | 75 | |
| Lys | Cys | His | Pro | Gly | Tyr | Ala | Gly | Lys | Thr | Cys | Asn | Gln | Asp | Leu | 80 | 85 | 90 | |
| Asn | Glu | Cys | Gly | Leu | Lys | Pro | Arg | Pro | Cys | Lys | His | Arg | Cys | Met | 95 | 100 | 105 | |
| Asn | Thr | Tyr | Gly | Ser | Tyr | Lys | Cys | Tyr | Cys | Leu | Asn | Gly | Tyr | Met | 110 | 115 | 120 | |
| Leu | Met | Pro | Asp | Gly | Ser | Cys | Ser | Ser | Ala | Leu | Thr | Cys | Ser | Met | 125 | 130 | 135 | |
| Ala | Asn | Cys | Gln | Tyr | Gly | Cys | Asp | Val | Val | Lys | Gly | Gln | Ile | Arg | 140 | 145 | 150 | |
| Cys | Gln | Cys | Pro | Ser | Pro | Gly | Leu | His | Leu | Ala | Pro | Asp | Gly | Arg | 155 | 160 | 165 | |

| | | |
|-------------------------------------|-------------------------|-----|
| Thr Cys Val Asp Val Asp Glu Cys Ala | Thr Gly Arg Ala Ser Cys | |
| 170 | 175 | 180 |
| Pro Arg Phe Arg Gln Cys Val Asn Thr | Phe Gly Ser Tyr Ile Cys | |
| 185 | 190 | 195 |
| Lys Cys His Lys Gly Phe Asp Leu Met | Tyr Ile Gly Gly Lys Tyr | |
| 200 | 205 | 210 |
| Gln Cys His Asp Ile Asp Glu Cys Ser | Leu Gly Gln Tyr Gln Cys | |
| 215 | 220 | 225 |
| Ser Ser Phe Ala Arg Cys Tyr Asn Val | Arg Gly Ser Tyr Lys Cys | |
| 230 | 235 | 240 |
| Lys Cys Lys Glu Gly Tyr Gln Gly Asp | Gly Leu Thr Cys Val Tyr | |
| 245 | 250 | 255 |
| Ile Pro Lys Val Met Ile Glu Pro Ser | Gly Pro Ile His Val Pro | |
| 260 | 265 | 270 |
| Lys Gly Asn Gly Thr Ile Leu Lys Gly | Asp Thr Gly Asn Asn Asn | |
| 275 | 280 | 285 |
| Trp Ile Pro Asp Val Gly Ser Thr Trp | Trp Pro Pro Lys Thr Pro | |
| 290 | 295 | 300 |
| Tyr Ile Pro Pro Ile Ile Thr Asn Arg | Pro Thr Ser Lys Pro Thr | |
| 305 | 310 | 315 |
| Thr Arg Pro Thr Pro Lys Pro Thr Pro | Ile Pro Thr Pro Pro Pro | |
| 320 | 325 | 330 |
| Pro Pro Pro Leu Pro Thr Glu Leu Arg | Thr Pro Leu Pro Pro Thr | |
| 335 | 340 | 345 |
| Thr Pro Glu Arg Pro Thr Thr Gly Leu | Thr Thr Ile Ala Pro Ala | |
| 350 | 355 | 360 |
| Ala Ser Thr Pro Pro Gly Gly Ile Thr | Val Asp Asn Arg Val Gln | |
| 365 | 370 | 375 |
| Thr Asp Pro Gln Lys Pro Arg Gly Asp | Val Phe Ser Val Leu Val | |
| 380 | 385 | 390 |
| His Ser Cys Asn Phe Asp His Gly Leu | Cys Gly Trp Ile Arg Glu | |
| 395 | 400 | 405 |
| Lys Asp Asn Asp Leu His Trp Glu Pro | Ile Arg Asp Pro Ala Gly | |
| 410 | 415 | 420 |
| Gly Gln Tyr Leu Thr Val Ser Ala Ala | Lys Ala Pro Gly Gly Lys | |

| | | |
|-------------------------------------|-------------------------|-----|
| 425 | 430 | 435 |
| Ala Ala Arg Leu Val Leu Pro Leu Gly | Arg Leu Met His Ser Gly | |
| 440 | 445 | 450 |
| Asp Leu Cys Leu Ser Phe Arg His Lys | Val Thr Gly Leu His Ser | |
| 455 | 460 | 465 |
| Gly Thr Leu Gln Val Phe Val Arg Lys | His Gly Ala His Gly Ala | |
| 470 | 475 | 480 |
| Ala Leu Trp Gly Arg Asn Gly Gly His | Gly Trp Arg Gln Thr Gln | |
| 485 | 490 | 495 |
| Ile Thr Leu Arg Gly Ala Asp Ile Lys | Ser Glu Ser Gln Arg | |
| 500 | 505 | |

<210> 316

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 316

gatggttcct gctcaagtc cctg 24

<210> 317

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 317

ttgcacttgt aggacccacg tacg 24

<210> 318

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 318

ctgatgggag gacctgtgta gatgttgatg aatgtgctac aggaagagcc 50

<210> 319

<211> 2110

<212> DNA

<400> 319

| | | | | | |
|-------------|------------|-------------|-------------|-------------|------|
| cttcttttgaa | aaggattatc | acctgatcag | gttctctctg | catttgcccc | 50 |
| tttagattgt | gaaatgtggc | tcaaggctct | cacaactttc | ctttcctttg | 100 |
| caacaggtgc | ttgctcgggg | ctgaagggtga | cagtgccatc | acacactgtc | 150 |
| catggcgta | gaggtcaggc | cctctaccta | cccgccact | atggcttcca | 200 |
| cactccagca | tcagacatcc | agatcatatg | gctatttgag | agaccccaca | 250 |
| caatgcccaa | atacttactg | ggctctgtga | ataagtctgt | ggttcctgac | 300 |
| ttggaatacc | aacacaagtt | caccatgatg | ccacccaatg | catctctgct | 350 |
| tatcaaccca | ctgcagttcc | ctgatgaagg | caattacatc | gtgaagggtca | 400 |
| acattcaggg | aaatggaact | ctatctgcca | gtcagaagat | acaagtcacg | 450 |
| gttgatgatc | ctgtcacaaa | gccagtgggt | cagattcatc | ctccctctgg | 500 |
| ggctgtggag | tatgtgggga | acatgaccct | gacatgccat | gtggaagggg | 550 |
| gcactcggct | agcttaccaa | tggctaataa | atgggagacc | tgtccacacc | 600 |
| agctccacct | actccttttc | tccccaaaac | aatacccttc | atattgctcc | 650 |
| agtaaccaag | gaagacattg | ggaattacag | ctgcctgggt | aggaaccctg | 700 |
| tcagtgaaat | ggaaagtgat | atcattatgc | ccatcatata | ttatggacct | 750 |
| tatggacttc | aagtgaattc | tgataaaggg | ctaaaagtag | gggaagtgtt | 800 |
| tactgttgac | cttgagagg | ccatcctatt | tgattgttct | gctgattctc | 850 |
| atccccccaa | cacctactcc | tggattagga | ggactgacaa | tactacatat | 900 |
| atcattaagc | atgggcctcg | cttagaagtt | gcactctgaga | aagtagccca | 950 |
| gaagacaatg | gactatgtgt | gctgtgctta | caacaacata | accggcaggc | 1000 |
| aagatgaaac | tcatttcaca | gttatcatca | cttccgtagg | actggagaag | 1050 |
| cttgcacaga | aaggaaaatc | attgtcacct | ttagcaagta | taactggaat | 1100 |
| atcactattt | ttgattatat | ccatgtgtct | tctcttccta | tggaaaaaat | 1150 |
| atcaacccta | caaagttata | aaacagaaac | tagaaggcag | gccagaaaca | 1200 |
| gaatacacga | aagctcaaac | atcttcaggc | catgaagatg | ctctggatga | 1250 |

cttcggaata tatgaatttg ttgcttttcc agatgtttct ggtgtttcca 1300
 ggattccaag caggtctggt ccagcctctg attgtgtatc ggggcaagat 1350
 ttgcacagta cagtgtatga agttattcag cacatccctg cccagcagca 1400
 agaccatcca gagtgaactt tcatgggcta aacagtacat tcgagtgaaa 1450
 ttctgaagaa acattttaag gaaaaacagt ggaaaagtat attaactctg 1500
 aatcagttaa gaaaccagga ccaacacctc ttactcatta ttcctttaca 1550
 tgcagaatag aggcatttat gcaaattgaa ctgcagggtt ttcagcatat 1600
 acacaatgtc ttgtgcaaca gaaaaacatg ttgggggaaat attcctcagt 1650
 ggagagtcgt tctcatgctg acggggagaa cgaaagtgc aggggtttcc 1700
 tcataagttt tgtatgaaat atctctacaa acctcaatta gttctactct 1750
 acactttcac tatcatcaac actgagacta tcctgtctca cctacaaatg 1800
 tggaaacttt acattgttcg atttttcagc agactttggt ttattaaatt 1850
 tttattagtg ttaagaatgc taaatttatg tttcaatttt atttccaaat 1900
 ttctatcttg ttatttgtac aacaaagtaa taaggatggt tgtcacaaaa 1950
 aaaaaactat gccttctctt ttttttcaat caccagtagt atttttgaga 2000
 agacttgtga acacttaagg aaatgactat taaagtctta tttttatttt 2050
 tttcaaggaa agatggattc aaataaatta ttctgttttt gcttttaaaa 2100
 aaaaaaaaaa 2110

<210> 320

<211> 450

<212> PRT

<213> Homo Sapien

<400> 320

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Trp | Leu | Lys | Val | Phe | Thr | Thr | Phe | Leu | Ser | Phe | Ala | Thr | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Cys | Ser | Gly | Leu | Lys | Val | Thr | Val | Pro | Ser | His | Thr | Val | His |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Val | Arg | Gly | Gln | Ala | Leu | Tyr | Leu | Pro | Val | His | Tyr | Gly | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Thr | Pro | Ala | Ser | Asp | Ile | Gln | Ile | Ile | Trp | Leu | Phe | Glu | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Pro | His | Thr | Met | Pro | Lys | Tyr | Leu | Leu | Gly | Ser | Val | Asn | Lys | Ser | | 65 | 70 | 75 |
| Val | Val | Pro | Asp | Leu | Glu | Tyr | Gln | His | Lys | Phe | Thr | Met | Met | Pro | | 80 | 85 | 90 |
| Pro | Asn | Ala | Ser | Leu | Leu | Ile | Asn | Pro | Leu | Gln | Phe | Pro | Asp | Glu | | 95 | 100 | 105 |
| Gly | Asn | Tyr | Ile | Val | Lys | Val | Asn | Ile | Gln | Gly | Asn | Gly | Thr | Leu | | 110 | 115 | 120 |
| Ser | Ala | Ser | Gln | Lys | Ile | Gln | Val | Thr | Val | Asp | Asp | Pro | Val | Thr | | 125 | 130 | 135 |
| Lys | Pro | Val | Val | Gln | Ile | His | Pro | Pro | Ser | Gly | Ala | Val | Glu | Tyr | | 140 | 145 | 150 |
| Val | Gly | Asn | Met | Thr | Leu | Thr | Cys | His | Val | Glu | Gly | Gly | Thr | Arg | | 155 | 160 | 165 |
| Leu | Ala | Tyr | Gln | Trp | Leu | Lys | Asn | Gly | Arg | Pro | Val | His | Thr | Ser | | 170 | 175 | 180 |
| Ser | Thr | Tyr | Ser | Phe | Ser | Pro | Gln | Asn | Asn | Thr | Leu | His | Ile | Ala | | 185 | 190 | 195 |
| Pro | Val | Thr | Lys | Glu | Asp | Ile | Gly | Asn | Tyr | Ser | Cys | Leu | Val | Arg | | 200 | 205 | 210 |
| Asn | Pro | Val | Ser | Glu | Met | Glu | Ser | Asp | Ile | Ile | Met | Pro | Ile | Ile | | 215 | 220 | 225 |
| Tyr | Tyr | Gly | Pro | Tyr | Gly | Leu | Gln | Val | Asn | Ser | Asp | Lys | Gly | Leu | | 230 | 235 | 240 |
| Lys | Val | Gly | Glu | Val | Phe | Thr | Val | Asp | Leu | Gly | Glu | Ala | Ile | Leu | | 245 | 250 | 255 |
| Phe | Asp | Cys | Ser | Ala | Asp | Ser | His | Pro | Pro | Asn | Thr | Tyr | Ser | Trp | | 260 | 265 | 270 |
| Ile | Arg | Arg | Thr | Asp | Asn | Thr | Thr | Tyr | Ile | Ile | Lys | His | Gly | Pro | | 275 | 280 | 285 |
| Arg | Leu | Glu | Val | Ala | Ser | Glu | Lys | Val | Ala | Gln | Lys | Thr | Met | Asp | | 290 | 295 | 300 |
| Tyr | Val | Cys | Cys | Ala | Tyr | Asn | Asn | Ile | Thr | Gly | Arg | Gln | Asp | Glu | | 305 | 310 | 315 |
| Thr | His | Phe | Thr | Val | Ile | Ile | Thr | Ser | Val | Gly | Leu | Glu | Lys | Leu | | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 320 | 325 | 330 |
| Ala Gln Lys Gly Lys Ser Leu Ser Pro | Leu Ala Ser Ile Thr Gly | |
| 335 | 340 | 345 |
| Ile Ser Leu Phe Leu Ile Ile Ser Met | Cys Leu Leu Phe Leu Trp | |
| 350 | 355 | 360 |
| Lys Lys Tyr Gln Pro Tyr Lys Val Ile | Lys Gln Lys Leu Glu Gly | |
| 365 | 370 | 375 |
| Arg Pro Glu Thr Glu Tyr Arg Lys Ala | Gln Thr Phe Ser Gly His | |
| 380 | 385 | 390 |
| Glu Asp Ala Leu Asp Asp Phe Gly Ile | Tyr Glu Phe Val Ala Phe | |
| 395 | 400 | 405 |
| Pro Asp Val Ser Gly Val Ser Arg Ile | Pro Ser Arg Ser Val Pro | |
| 410 | 415 | 420 |
| Ala Ser Asp Cys Val Ser Gly Gln Asp | Leu His Ser Thr Val Tyr | |
| 425 | 430 | 435 |
| Glu Val Ile Gln His Ile Pro Ala Gln | Gln Gln Asp His Pro Glu | |
| 440 | 445 | 450 |

<210> 321

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 321

gacacctgtca caaagccagt ggtgc 25

<210> 322

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 322

cactgacagg gttcctcacc cagg 24

<210> 323

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 323

ctccctctgg gctgtggagt atgtggggaa catgaccctg acatg 45

<210> 324

<211> 2397

<212> DNA

<213> Homo Sapien

<400> 324

gcaagcggcg aaatggcgcc ctccgggagt cttgcagttc ccctggcagt 50

cctgggtgctg ttgctttggg gtgctccctg gacgcacggg cggcggagca 100

acgttcgcgt catcacggac gagaactgga gagaactgct ggaaggagac 150

tggatgatag aattttatgc cccgtggtgc cctgcttgct aaaatcttca 200

accggaatgg gaaagttttg ctgaatgggg agaagatctt gaggttaata 250

ttgcgaaagt agatgtcaca gagcagccag gactgagtgg acggtttata 300

ataactgctc ttcctactat ttatcattgt aaagatggtg aatttaggcg 350

ctatcagggt ccaaggacta agaaggactt cataaacttt ataagtata 400

aagagtggaa gagtattgag cccgtttcat catggtttgg tccaggttct 450

gttctgatga gtagtatgtc agcactcttt cagctatcta tgtggatcag 500

gacgtgccat aactacttta ttgaagacct tggattgcca gtgtggggat 550

catatactgt ttttgcttta gcaactctgt tttccggact gttattagga 600

ctctgtatga tatttggtgc agattgcctt tgtccttcaa aaaggcgcag 650

accacagcca taccataacc cttcaaaaaa attattatca gaatctgcac 700

aacctttgaa aaaagtggag gaggaacaag aggcggatga agaagatggt 750

tcagaagaag aagctgaaag taaagaagga acaaacaag actttccaca 800

gaatgccata agacaacgct ctctgggtcc atcattggcc acagataaat 850

cctagttaaa ttttatagtt atcttaatat tatgattttg ataaaaacag 900

aagattgatc attttgtttg gtttgaagtg aactgtgact tttttgaata 950

ttgcagggtt cagtctagat tgtcattaaa ttgaagagtc tacattcaga 1000


```
<210> 325
<211> 280
<212> PRT
```

<400> 325

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Ser | Gly | Ser | Leu | Ala | Val | Pro | Leu | Ala | Val | Leu | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Leu | Trp | Gly | Ala | Pro | Trp | Thr | His | Gly | Arg | Arg | Ser | Asn |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Arg | Val | Ile | Thr | Asp | Glu | Asn | Trp | Arg | Glu | Leu | Leu | Glu | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asp | Trp | Met | Ile | Glu | Phe | Tyr | Ala | Pro | Trp | Cys | Pro | Ala | Cys | Gln |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asn | Leu | Gln | Pro | Glu | Trp | Glu | Ser | Phe | Ala | Glu | Trp | Gly | Glu | Asp |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Glu | Val | Asn | Ile | Ala | Lys | Val | Asp | Val | Thr | Glu | Gln | Pro | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Ser | Gly | Arg | Phe | Ile | Ile | Thr | Ala | Leu | Pro | Thr | Ile | Tyr | His |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Cys | Lys | Asp | Gly | Glu | Phe | Arg | Arg | Tyr | Gln | Gly | Pro | Arg | Thr | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Lys | Asp | Phe | Ile | Asn | Phe | Ile | Ser | Asp | Lys | Glu | Trp | Lys | Ser | Ile |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Pro | Val | Ser | Ser | Trp | Phe | Gly | Pro | Gly | Ser | Val | Leu | Met | Ser |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ser | Met | Ser | Ala | Leu | Phe | Gln | Leu | Ser | Met | Trp | Ile | Arg | Thr | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| His | Asn | Tyr | Phe | Ile | Glu | Asp | Leu | Gly | Leu | Pro | Val | Trp | Gly | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Tyr | Thr | Val | Phe | Ala | Leu | Ala | Thr | Leu | Phe | Ser | Gly | Leu | Leu | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Leu | Cys | Met | Ile | Phe | Val | Ala | Asp | Cys | Leu | Cys | Pro | Ser | Lys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Arg | Arg | Pro | Gln | Pro | Tyr | Pro | Tyr | Pro | Ser | Lys | Lys | Leu | Leu |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 215 | | 220 | | 225 | | | | | | | | | |
| Ser | Glu | Ser | Ala | Gln | Pro | Leu | Lys | Lys | Val | Glu | Glu | Glu | Gln | Glu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Asp | Glu | Glu | Asp | Val | Ser | Glu | Glu | Glu | Ala | Glu | Ser | Lys | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gly | Thr | Asn | Lys | Asp | Phe | Pro | Gln | Asn | Ala | Ile | Arg | Gln | Arg | Ser |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Gly | Pro | Ser | Leu | Ala | Thr | Asp | Lys | Ser | | | | | |
| | | | | 275 | | | | | 280 | | | | | |

<210> 326

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 326

tgaggtgggc aagcggcgaa atg 23

<210> 327

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 327

tatgtggatc aggacgtgcc 20

<210> 328

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 328

tgcagggttc agtctagatt g 21

<210> 329

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 329

ttgaaggaca aaggcaatct gccac 25

<210> 330

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 330

ggagtcttgc agttcccctg gcagtcctgg tgctgttgc ttggg 45

<210> 331

<211> 2168

<212> DNA

<213> Homo Sapien

<400> 331

gcgagtgtcc agctgcggag acccgtgata attcgtaa taattcaaca 50
 aacgggaccc ttctgtgtgc cagaaaccgc aagcagttgc taaccagtg 100
 ggacaggcgg attggaagag cgggaaggtc ctggcccaga gcagtgtgac 150
 acttcctct gtgaccatga aactctgggt gtctgcattg ctgatggcct 200
 ggtttggtgt cctgagctgt gtgcaggccg aattcttcac ctctattggg 250
 cacatgactg acctgattta tgcagagaaa gagctggtgc agtctctgaa 300
 agagtacatc cttgtggagg aagccaagct ttccaagatt aagagctggg 350
 ccaacaaaat ggaagccttg actagcaagt cagctgctga tgctgagggc 400
 tacctggctc accctgtgaa tgctacaaa ctggtgaagc ggctaaacac 450
 agactggcct gcgctggagg accttgtcct gcaggactca gctgcagggt 500
 ttatcgccaa cctctctgtg cagcggcagt tcttccccac tgatgaggac 550
 gagataggag ctgccaaagc cctgatgaga cttcaggaca catacaggct 600
 ggaccacaggc acaatttcca gaggggaact tccaggaacc aagtaccagg 650
 caatgctgag tgtggatgac tgctttggga tgggccgctc ggcctacaat 700
 gaaggggact attatcatatc ggtgttgtgg atggagcagg tgctaaagca 750

| | | | | | | | | | | |
|--------|---------|--------|----------|--------|----------|-------|----------|-------|----------|------|
| gctt | gatgcc | gggg | gaggag | ccacc | acaac | caagt | cacag | gtgct | ggact | 800 |
| acct | cagcta | tgtct | gtcttc | cagtt | gggtg | atctg | caccg | tgcct | tgag | 850 |
| ctcacc | cgcc | gcct | gtcttc | ccttg | accca | agcca | cgaac | gagct | ggagg | 900 |
| gaat | ctgcgg | tacttt | gagc | agtt | attgga | ggaag | agaga | gaaaa | aacgt | 950 |
| taacaa | atca | gacaga | aagct | gagct | tagcaa | cccc | agaag | catct | atgag | 1000 |
| aggc | ctgtgg | actac | ctgcc | tgag | agggat | gttt | acgaga | gcct | ctgtcg | 1050 |
| tgggg | aggggt | gtcaa | actga | cacccc | gtag | acaga | aagagg | ctttt | ctgta | 1100 |
| ggtacc | acca | tggca | acagg | gcccc | acagc | tgct | cattgc | ccc | ttcaaa | 1150 |
| gagg | aggacg | agtgg | gacag | ccgc | acatc | gtc | aggtact | acgat | gtcat | 1200 |
| gtct | gatgag | gaaat | cgaga | ggat | caagga | gatc | gcaaaa | cctaa | aacttg | 1250 |
| cacg | agccac | cgttc | gtgat | ccca | agacag | gagtc | cctcac | tgtc | gccagc | 1300 |
| tacc | gggttt | ccaaa | agctc | ctgg | ctagag | gaag | atgatg | acc | ctgttgt | 1350 |
| ggccc | gagta | aatcg | tcgga | tgc | agcatat | cac | agggtta | acag | taaaga | 1400 |
| ctgc | agaatt | gttac | aggtt | gcaa | attatg | gagt | gggagg | acag | tatgaa | 1450 |
| ccgc | acttcg | acttc | cttag | gcg | acctttt | gac | agcggcc | tcaaa | acaga | 1500 |
| gggga | atagg | ttag | cgacgt | ttct | taacta | catg | agtgat | gtaga | agctg | 1550 |
| gtgg | tgccac | cgtct | tcct | gatct | ggggg | ctg | caatttg | gccta | agaag | 1600 |
| ggtac | agctg | tgttc | tggta | caac | ctcttg | cgg | agcgggg | aagg | tgacta | 1650 |
| ccga | acaaga | catg | ctgcct | gcct | gtgtct | tgt | gggctgc | aagt | gggtct | 1700 |
| cca | ataagt | gttc | catgaa | cgag | gacagg | agtt | cttgag | ac | ttgtgga | 1750 |
| tca | acagaag | ttg | actgaca | tc | cttttctg | tc | cttcccct | tc | ctggctct | 1800 |
| tcag | cccatg | tca | acgtgac | ag | acaccttt | gt | atgttcct | tt | gtatgttc | 1850 |
| ctat | caggct | gatt | ttttgga | gaa | atgaatg | ttt | gtctgga | gc | agaggag | 1900 |
| acc | atactag | ggc | gactcct | gt | gtgactga | agt | cccagcc | ctt | ccattca | 1950 |
| gcct | gtgcca | tc | cctggccc | ca | aggctagg | at | caaagtgg | ct | gcagcaga | 2000 |
| gttag | ctgtc | tag | cgcttag | ca | agg | tg | cct | tt | gtacctca | 2050 |
| gtgt | gagatg | ttt | cagtga | cc | aaagt | tt | ct | gata | ccttgt | 2100 |

gtttttatgg catttctatc tattgtggct ttaccaaaaa ataaaatgtc 2150

cctaccagaa aaaaaaaaa 2168

<210> 332

<211> 533

<212> PRT

<213> Homo Sapien

<400> 332

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Lys | Leu | Trp | Val | Ser | Ala | Leu | Leu | Met | Ala | Trp | Phe | Gly | Val | 1 | 5 | 10 | 15 |
| Leu | Ser | Cys | Val | Gln | Ala | Glu | Phe | Phe | Thr | Ser | Ile | Gly | His | Met | 20 | 25 | 30 | |
| Thr | Asp | Leu | Ile | Tyr | Ala | Glu | Lys | Glu | Leu | Val | Gln | Ser | Leu | Lys | 35 | 40 | 45 | |
| Glu | Tyr | Ile | Leu | Val | Glu | Glu | Ala | Lys | Leu | Ser | Lys | Ile | Lys | Ser | 50 | 55 | 60 | |
| Trp | Ala | Asn | Lys | Met | Glu | Ala | Leu | Thr | Ser | Lys | Ser | Ala | Ala | Asp | 65 | 70 | 75 | |
| Ala | Glu | Gly | Tyr | Leu | Ala | His | Pro | Val | Asn | Ala | Tyr | Lys | Leu | Val | 80 | 85 | 90 | |
| Lys | Arg | Leu | Asn | Thr | Asp | Trp | Pro | Ala | Leu | Glu | Asp | Leu | Val | Leu | 95 | 100 | 105 | |
| Gln | Asp | Ser | Ala | Ala | Gly | Phe | Ile | Ala | Asn | Leu | Ser | Val | Gln | Arg | 110 | 115 | 120 | |
| Gln | Phe | Phe | Pro | Thr | Asp | Glu | Asp | Glu | Ile | Gly | Ala | Ala | Lys | Ala | 125 | 130 | 135 | |
| Leu | Met | Arg | Leu | Gln | Asp | Thr | Tyr | Arg | Leu | Asp | Pro | Gly | Thr | Ile | 140 | 145 | 150 | |
| Ser | Arg | Gly | Glu | Leu | Pro | Gly | Thr | Lys | Tyr | Gln | Ala | Met | Leu | Ser | 155 | 160 | 165 | |
| Val | Asp | Asp | Cys | Phe | Gly | Met | Gly | Arg | Ser | Ala | Tyr | Asn | Glu | Gly | 170 | 175 | 180 | |
| Asp | Tyr | Tyr | His | Thr | Val | Leu | Trp | Met | Glu | Gln | Val | Leu | Lys | Gln | 185 | 190 | 195 | |
| Leu | Asp | Ala | Gly | Glu | Glu | Ala | Thr | Thr | Thr | Lys | Ser | Gln | Val | Leu | 200 | 205 | 210 | |

| | | | |
|---|-----|-----|-----|
| Asp Tyr Leu Ser Tyr Ala Val Phe Gln Leu Gly Asp Leu His Arg | 215 | 220 | 225 |
| Ala Leu Glu Leu Thr Arg Arg Leu Leu Ser Leu Asp Pro Ser His | 230 | 235 | 240 |
| Glu Arg Ala Gly Gly Asn Leu Arg Tyr Phe Glu Gln Leu Leu Glu | 245 | 250 | 255 |
| Glu Glu Arg Glu Lys Thr Leu Thr Asn Gln Thr Glu Ala Glu Leu | 260 | 265 | 270 |
| Ala Thr Pro Glu Gly Ile Tyr Glu Arg Pro Val Asp Tyr Leu Pro | 275 | 280 | 285 |
| Glu Arg Asp Val Tyr Glu Ser Leu Cys Arg Gly Glu Gly Val Lys | 290 | 295 | 300 |
| Leu Thr Pro Arg Arg Gln Lys Arg Leu Phe Cys Arg Tyr His His | 305 | 310 | 315 |
| Gly Asn Arg Ala Pro Gln Leu Leu Ile Ala Pro Phe Lys Glu Glu | 320 | 325 | 330 |
| Asp Glu Trp Asp Ser Pro His Ile Val Arg Tyr Tyr Asp Val Met | 335 | 340 | 345 |
| Ser Asp Glu Glu Ile Glu Arg Ile Lys Glu Ile Ala Lys Pro Lys | 350 | 355 | 360 |
| Leu Ala Arg Ala Thr Val Arg Asp Pro Lys Thr Gly Val Leu Thr | 365 | 370 | 375 |
| Val Ala Ser Tyr Arg Val Ser Lys Ser Ser Trp Leu Glu Glu Asp | 380 | 385 | 390 |
| Asp Asp Pro Val Val Ala Arg Val Asn Arg Arg Met Gln His Ile | 395 | 400 | 405 |
| Thr Gly Leu Thr Val Lys Thr Ala Glu Leu Leu Gln Val Ala Asn | 410 | 415 | 420 |
| Tyr Gly Val Gly Gly Gln Tyr Glu Pro His Phe Asp Phe Ser Arg | 425 | 430 | 435 |
| Arg Pro Phe Asp Ser Gly Leu Lys Thr Glu Gly Asn Arg Leu Ala | 440 | 445 | 450 |
| Thr Phe Leu Asn Tyr Met Ser Asp Val Glu Ala Gly Gly Ala Thr | 455 | 460 | 465 |
| Val Phe Pro Asp Leu Gly Ala Ala Ile Trp Pro Lys Lys Gly Thr | 470 | 475 | 480 |

Ala Val Phe Trp Tyr Asn Leu Leu Arg Ser Gly Glu Gly Asp Tyr
485 490 495

Arg Thr Arg His Ala Ala Cys Pro Val Leu Val Gly Cys Lys Trp
500 505 510

Val Ser Asn Lys Trp Phe His Glu Arg Gly Gln Glu Phe Leu Arg
515 520 525

Pro Cys Gly Ser Thr Glu Val Asp
530

<210> 333

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 333

ccaggcaciaa tttccaga 18

<210> 334

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 334

ggacccttct gtgtgccag 19

<210> 335

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 335

ggtctcaaga actcctgtc 19

<210> 336

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 336
acactcagca ttgcctggta cttg 24

<210> 337
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 337
gggcacatga ctgacctgat ttatgcagag aaagagctgg tgcag 45

<210> 338
<211> 2789

<212> DNA
<213> Homo Sapien

<400> 338
gcagtattga gttttacttc ctctctttt tagtggaga cagaccataa 50
tcccagtgat agtgaaattg attgtttcat ttattaccgt tttggctggg 100
ggttagttcc gacaccttca cagttgaaga gcaggcagaa ggagttgtga 150
agacaggaca atcttcttgg ggatgctggg cctggaagcc agcgggcctt 200
gctctgtctt tggcctcatt gacccaggt tctctggta aaactgaaag 250
cctactactg gcctggtgcc catcaatcca ttgatccttg aggctgtgcc 300
cctggggcac ccacctggca gggcctacca ccatgcgact gagctccctg 350
ttggctctgc tgcggccagc gcttcccctc atcttagggc tgtctctggg 400
gtgcagcctg agcctcctgc gggtttcctg gatccagggg gagggagaag 450
atccctgtgt cgaggctgta ggggagcgag gagggccaca gaatccagat 500
tcgagagctc ggctagacca aagtgatgaa gacttcaaac cccggattgt 550
cccctactac agggacccca acaagcccta caagaagggtg ctgaggactc 600
ggtacatcca gacagagctg ggctcccgtg agcgggttgct ggtggctgtc 650
ctgacctccc gagctacact gtccactttg gccgtggctg tgaaccgtac 700
ggtggcccat cacttccctc ggttactcta cttcactggg cagcgggggg 750
cccgggctcc agcagggatg caggtggtgt ctcatgggga tgagcggccc 800

| | | | | | |
|-------------|-------------|------------|------------|-------------|------|
| gcctggctca | tgtcagagac | cctgcgccac | cttcacacac | actttggggc | 850 |
| cgactacgac | tggttcttca | tcatgcagga | tgacacatat | gtgcaggccc | 900 |
| cccgcctggc | agcccttgct | ggccacctca | gcaccaacca | agacctgtac | 950 |
| ttaggccggg | cagaggagtt | cattggcgca | ggcgagcagg | cccgggtactg | 1000 |
| tcatgggggc | tttggctacc | tgttgtcacg | gagtctcctg | cttcgtctgc | 1050 |
| ggccacatct | ggatggctgc | cgaggagaca | ttctcagtgc | ccgtcctgac | 1100 |
| gagtggcttg | gacgctgcct | cattgactct | ctgggcgtcg | gctgtgtctc | 1150 |
| acagcaccag | gggcagcagt | atcgctcatt | tgaactggcc | aaaaataggg | 1200 |
| accctgagaa | ggaagggagc | tcggctttcc | tgagtgcctt | cgccgtgcac | 1250 |
| cctgtctccg | aaggtaccct | catgtaccgg | ctccacaaac | gcttcagcgc | 1300 |
| tctggagttg | gagcgggctt | acagtgaaat | agaacaactg | caggctcaga | 1350 |
| tccggaacct | gaccgtgctg | acccccgaag | gggaggcagg | gctgagctgg | 1400 |
| cccgttgggc | tccctgctcc | tttcacacca | cactctcgct | ttgaggtgct | 1450 |
| gggctgggac | tacttcacag | agcagcacac | cttctcctgt | gcagatgggg | 1500 |
| ctcccaagtg | cccactacag | ggggctagca | gggcggacgt | gggtgatgcg | 1550 |
| ttggagactg | ccctggagca | gctcaatcgg | cgctatcagc | cccgcctgcg | 1600 |
| cttcagaag | cagcgactgc | tcaacggcta | tcggcgcttc | gaccagcac | 1650 |
| ggggcatgga | gtacacctg | gacctgctgt | tggaatgtgt | gacacagcgt | 1700 |
| gggcaccggc | gggccctggc | tcgcagggtc | agcctgctgc | ggccactgag | 1750 |
| ccgggtggaa | atcctacct | tgccctatgt | cactgaggcc | acccgagtgc | 1800 |
| agctgggtgct | gccactcctg | gtggctgaag | ctgctgcagc | cccggctttc | 1850 |
| ctcgaggcgt | ttgcagccaa | tgtcctggag | ccacgagaac | atgcattgct | 1900 |
| cacctgttg | ctggtctacg | ggccacgaga | aggtggccgt | ggagctccag | 1950 |
| accatttct | tgggggtgaag | gctgcagcag | cggagttaga | gcgacggtac | 2000 |
| cctgggacga | ggctggcctg | gctcgctgtg | cgagcagagg | cccttccca | 2050 |
| ggtgcgactc | atggacgtgg | tctcgaagaa | gcacctgtg | gacactctct | 2100 |

tcttccttac caccgtgtgg acaaggcctg ggcccgaagt cctcaaccgc 2150
 tgtcgcatga atgccatctc tggtggcag gccttcttcc cagtccattt 2200
 ccaggagttc aatcctgccc tgtcaccaca gagatcaccc ccaggggccc 2250
 cgggggctgg ccttgacccc ccctcccctc ctgggtgctga cccctcccgg 2300
 ggggctccta taggggggag atttgaccgg caggettctg cggagggctg 2350
 cttctacaac gctgactacc tggcggcccg agcccggctg gcaggtgaac 2400
 tggcaggcca ggaagaggag gaagccctgg aggggctgga ggtgatggat 2450
 gttttcctcc ggttctcagg gctccacctc tttcgggccg tagagccagg 2500
 gctggtgcag aagttctccc tgcgagactg cagcccacgg ctcaagtgaag 2550
 aactctacca ccgctgccgc ctcaaccaacc tggaggggct agggggccgt 2600
 gccagctgg ctatggctct ctttgagcag gacgaggcca atagcactta 2650
 gcccgctgg gggccctaac ctcattacct ttcctttgtc tgcctcagcc 2700
 ccaggaaggg caaggcaaga tggcggacag atagagaatt gttgctgtat 2750
 tttttaaata tgaaaatggt attaaacatg tcttctgcc 2789

<210> 339

<211> 772

<212> PRT

<213> Homo Sapien

<400> 339

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Ser | Ser | Leu | Leu | Ala | Leu | Leu | Arg | Pro | Ala | Leu | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ile | Leu | Gly | Leu | Ser | Leu | Gly | Cys | Ser | Leu | Ser | Leu | Leu | Arg |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Trp | Ile | Gln | Gly | Glu | Gly | Glu | Asp | Pro | Cys | Val | Glu | Ala |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gly | Glu | Arg | Gly | Gly | Pro | Gln | Asn | Pro | Asp | Ser | Arg | Ala | Arg |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asp | Gln | Ser | Asp | Glu | Asp | Phe | Lys | Pro | Arg | Ile | Val | Pro | Tyr |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Arg | Asp | Pro | Asn | Lys | Pro | Tyr | Lys | Lys | Val | Leu | Arg | Thr | Arg |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ile | Gln | Thr | Glu | Leu | Gly | Ser | Arg | Glu | Arg | Leu | Leu | Val | Ala |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 95 | | | | | | | | | | 100 | | | | | 105 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Val | Leu | Thr | Ser | Arg | Ala | Thr | Leu | Ser | Thr | Leu | Ala | Val | Ala | Val | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Asn | Arg | Thr | Val | Ala | His | His | Phe | Pro | Arg | Leu | Leu | Tyr | Phe | Thr | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Gly | Gln | Arg | Gly | Ala | Arg | Ala | Pro | Ala | Gly | Met | Gln | Val | Val | Ser | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| His | Gly | Asp | Glu | Arg | Pro | Ala | Trp | Leu | Met | Ser | Glu | Thr | Leu | Arg | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| His | Leu | His | Thr | His | Phe | Gly | Ala | Asp | Tyr | Asp | Trp | Phe | Phe | Ile | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Met | Gln | Asp | Asp | Thr | Tyr | Val | Gln | Ala | Pro | Arg | Leu | Ala | Ala | Leu | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Ala | Gly | His | Leu | Ser | Ile | Asn | Gln | Asp | Leu | Tyr | Leu | Gly | Arg | Ala | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Glu | Glu | Phe | Ile | Gly | Ala | Gly | Glu | Gln | Ala | Arg | Tyr | Cys | His | Gly | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Gly | Phe | Gly | Tyr | Leu | Leu | Ser | Arg | Ser | Leu | Leu | Leu | Arg | Leu | Arg | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Pro | His | Leu | Asp | Gly | Cys | Arg | Gly | Asp | Ile | Leu | Ser | Ala | Arg | Pro | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Asp | Glu | Trp | Leu | Gly | Arg | Cys | Leu | Ile | Asp | Ser | Leu | Gly | Val | Gly | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Cys | Val | Ser | Gln | His | Gln | Gly | Gln | Gln | Tyr | Arg | Ser | Phe | Glu | Leu | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Ala | Lys | Asn | Arg | Asp | Pro | Glu | Lys | Glu | Gly | Ser | Ser | Ala | Phe | Leu | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ser | Ala | Phe | Ala | Val | His | Pro | Val | Ser | Glu | Gly | Thr | Leu | Met | Tyr | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Arg | Leu | His | Lys | Arg | Phe | Ser | Ala | Leu | Glu | Leu | Glu | Arg | Ala | Tyr | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Ser | Glu | Ile | Glu | Gln | Leu | Gln | Ala | Gln | Ile | Arg | Asn | Leu | Thr | Val | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Leu | Thr | Pro | Glu | Gly | Glu | Ala | Gly | Leu | Ser | Trp | Pro | Val | Gly | Leu | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Ala | Pro | Phe | Thr | Pro | His | Ser | Arg | Phe | Glu | Val | Leu | Gly | Trp | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Asp | Tyr | Phe | Thr | Glu | Gln | His | Thr | Phe | Ser | Cys | Ala | Asp | Gly | Ala | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Pro | Lys | Cys | Pro | Leu | Gln | Gly | Ala | Ser | Arg | Ala | Asp | Val | Gly | Asp | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Ala | Leu | Glu | Thr | Ala | Leu | Glu | Gln | Leu | Asn | Arg | Arg | Tyr | Gln | Pro | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Arg | Leu | Arg | Phe | Gln | Lys | Gln | Arg | Leu | Leu | Asn | Gly | Tyr | Arg | Arg | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Phe | Asp | Pro | Ala | Arg | Gly | Met | Glu | Tyr | Thr | Leu | Asp | Leu | Leu | Leu | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Glu | Cys | Val | Thr | Gln | Arg | Gly | His | Arg | Arg | Ala | Leu | Ala | Arg | Arg | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Val | Ser | Leu | Leu | Arg | Pro | Leu | Ser | Arg | Val | Glu | Ile | Leu | Pro | Met | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Pro | Tyr | Val | Thr | Glu | Ala | Thr | Arg | Val | Gln | Leu | Val | Leu | Pro | Leu | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Leu | Val | Ala | Glu | Ala | Ala | Ala | Ala | Pro | Ala | Phe | Leu | Glu | Ala | Phe | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Ala | Ala | Asn | Val | Leu | Glu | Pro | Arg | Glu | His | Ala | Leu | Leu | Thr | Leu | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Leu | Leu | Val | Tyr | Gly | Pro | Arg | Glu | Gly | Gly | Arg | Gly | Ala | Pro | Asp | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Pro | Phe | Leu | Gly | Val | Lys | Ala | Ala | Ala | Ala | Glu | Leu | Glu | Arg | Arg | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Tyr | Pro | Gly | Thr | Arg | Leu | Ala | Trp | Leu | Ala | Val | Arg | Ala | Glu | Ala | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Pro | Ser | Gln | Val | Arg | Leu | Met | Asp | Val | Val | Ser | Lys | Lys | His | Pro | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Val | Asp | Thr | Leu | Phe | Phe | Leu | Thr | Thr | Val | Trp | Thr | Arg | Pro | Gly | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Pro | Glu | Val | Leu | Asn | Arg | Cys | Arg | Met | Asn | Ala | Ile | Ser | Gly | Trp | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Gln | Ala | Phe | Phe | Pro | Val | His | Phe | Gln | Glu | Phe | Asn | Pro | Ala | Leu | |
| | | | | 620 | | | | | 625 | | | | | 630 | |

Ser Pro Gln Arg Ser Pro Pro Gly Pro Pro Gly Ala Gly Pro Asp
 635 640 645
 Pro Pro Ser Pro Pro Gly Ala Asp Pro Ser Arg Gly Ala Pro Ile
 650 655 660
 Gly Gly Arg Phe Asp Arg Gln Ala Ser Ala Glu Gly Cys Phe Tyr
 665 670 675
 Asn Ala Asp Tyr Leu Ala Ala Arg Ala Arg Leu Ala Gly Glu Leu
 680 685 690
 Ala Gly Gln Glu Glu Glu Glu Ala Leu Glu Gly Leu Glu Val Met
 695 700 705
 Asp Val Phe Leu Arg Phe Ser Gly Leu His Leu Phe Arg Ala Val
 710 715 720
 Glu Pro Gly Leu Val Gln Lys Phe Ser Leu Arg Asp Cys Ser Pro
 725 730 735
 Arg Leu Ser Glu Glu Leu Tyr His Arg Cys Arg Leu Ser Asn Leu
 740 745 750
 Glu Gly Leu Gly Gly Arg Ala Gln Leu Ala Met Ala Leu Phe Glu
 755 760 765
 Gln Glu Gln Ala Asn Ser Thr
 770

<210> 340

<211> 1572

<212> DNA

<213> Homo Sapien

<400> 340

cggagtggtg cgccaacgtg agaggaaacc cgtgcgcggc tgcgctttcc 50
 tgtccccaag ccgttctaga cgcggaagaa atgctttctg aaagcagctc 100
 ctttttgaag ggtgtgatgc ttggaagcat tttctgtgct ttgatcacta 150
 tgctaggaca cattaggatt ggtcatggaa atagaatgca ccaccatgag 200
 catcatcacc tacaagctcc taacaaagaa gatattctga aaatttcaga 250
 ggatgagcgc atggagctca gtaagagctt tcgagtatac tgtattatcc 300
 ttgtaaaacc caaagatgtg agtctttggg ctgcagtaaa ggagacttgg 350
 accaaacact gtgacaaagc agagttcttc agttctgaaa atgttaaagt 400

gtttgagtca attaatatgg acacaaatga catgtgggta atgatgagaa 450
 aagcttaciaa atacgccttt gataagtata gagaccaata caactgggtc 500
 ttccctgcac gcccactac gtttgctatc attgaaaacc taaagtattt 550
 tttgttaaaa aaggatccat cacagccttt ctatctaggg cacactataa 600
 aatctggaga ccttgaatat gtgggtatgg aaggaggaat tgtcttaagt 650
 gtagaatcaa tgaaaagact taacagcctt ctcaatatcc cagaaaagtg 700
 tcctgaacag ggagggatga tttggaagat atctgaagat aaacagctag 750
 cagtttgcct gaaatatgct ggagtatttg cagaaaatgc agaagatgct 800
 gatggaaaag atgtatttaa taccaaatct gttgggcttt ctattaaaga 850
 ggcaatgact tatcacccca accaggtagt agaaggctgt tgttcagata 900
 tggctgttac ttttaatgga ctgactccaa atcagatgca tgtgatgatg 950
 tatgggggat accgccttag ggcatttggg catattttca atgatgcatt 1000
 ggttttctta cctccaaatg gttctgacaa tgactgagaa gtggtagaaa 1050
 agcgtgaata tgatctttgt ataggacgtg tgttgtcatt attttagta 1100
 gtaactacat atccaatata gctgtatgtt tctttttctt ttctaatttg 1150
 gtggcactgg tataaccaca cattaaagtc agtagtacat ttttaaata 1200
 ggggtggtttt tttctttaa acacatgaac attgtaaatg tgttggaag 1250
 aagtgtttta agaataataa ttttgcaaat aaactattaa taaatattat 1300
 atgtgataaa ttctaaatta tgaacattag aaatctgtgg ggcacatatt 1350
 tttgctgatt ggtaaaaaa ttttaacagg tctttagcgt tctaagatat 1400
 gcaaatgata tctctagttg tgaatttgtg attaaagtaa aacttttagc 1450
 tgtgtgttcc ctttacttct aatactgatt tatgttctaa gcctcccaa 1500
 gttccaatgg atttgccttc tcaaaatgta caactaagca actaaagaaa 1550
 attaaagtga aagttgaaaa at 1572

<210> 341

<211> 318

<212> PRT

<213> Homo Sapien

<400> 341

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Ser | Glu | Ser | Ser | Ser | Phe | Leu | Lys | Gly | Val | Met | Leu | Gly | 1 | 5 | 10 | 15 |
| Ser | Ile | Phe | Cys | Ala | Leu | Ile | Thr | Met | Leu | Gly | His | Ile | Arg | Ile | 20 | 25 | 30 | |
| Gly | His | Gly | Asn | Arg | Met | His | His | His | Glu | His | His | His | Leu | Gln | 35 | 40 | 45 | |
| Ala | Pro | Asn | Lys | Glu | Asp | Ile | Leu | Lys | Ile | Ser | Glu | Asp | Glu | Arg | 50 | 55 | 60 | |
| Met | Glu | Leu | Ser | Lys | Ser | Phe | Arg | Val | Tyr | Cys | Ile | Ile | Leu | Val | 65 | 70 | 75 | |
| Lys | Pro | Lys | Asp | Val | Ser | Leu | Trp | Ala | Ala | Val | Lys | Glu | Thr | Trp | 80 | 85 | 90 | |
| Thr | Lys | His | Cys | Asp | Lys | Ala | Glu | Phe | Phe | Ser | Ser | Glu | Asn | Val | 95 | 100 | 105 | |
| Lys | Val | Phe | Glu | Ser | Ile | Asn | Met | Asp | Thr | Asn | Asp | Met | Trp | Leu | 110 | 115 | 120 | |
| Met | Met | Arg | Lys | Ala | Tyr | Lys | Tyr | Ala | Phe | Asp | Lys | Tyr | Arg | Asp | 125 | 130 | 135 | |
| Gln | Tyr | Asn | Trp | Phe | Phe | Leu | Ala | Arg | Pro | Thr | Thr | Phe | Ala | Ile | 140 | 145 | 150 | |
| Ile | Glu | Asn | Leu | Lys | Tyr | Phe | Leu | Leu | Lys | Lys | Asp | Pro | Ser | Gln | 155 | 160 | 165 | |
| Pro | Phe | Tyr | Leu | Gly | His | Thr | Ile | Lys | Ser | Gly | Asp | Leu | Glu | Tyr | 170 | 175 | 180 | |
| Val | Gly | Met | Glu | Gly | Gly | Ile | Val | Leu | Ser | Val | Glu | Ser | Met | Lys | 185 | 190 | 195 | |
| Arg | Leu | Asn | Ser | Leu | Leu | Asn | Ile | Pro | Glu | Lys | Cys | Pro | Glu | Gln | 200 | 205 | 210 | |
| Gly | Gly | Met | Ile | Trp | Lys | Ile | Ser | Glu | Asp | Lys | Gln | Leu | Ala | Val | 215 | 220 | 225 | |
| Cys | Leu | Lys | Tyr | Ala | Gly | Val | Phe | Ala | Glu | Asn | Ala | Glu | Asp | Ala | 230 | 235 | 240 | |
| Asp | Gly | Lys | Asp | Val | Phe | Asn | Thr | Lys | Ser | Val | Gly | Leu | Ser | Ile | 245 | 250 | 255 | |
| Lys | Glu | Ala | Met | Thr | Tyr | His | Pro | Asn | Gln | Val | Val | Glu | Gly | Cys | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 260 | | 265 | | 270 | | | | | | | | | |
| Cys | Ser | Asp | Met | Ala | Val | Thr | Phe | Asn | Gly | Leu | Thr | Pro | Asn | Gln |
| | 275 | | | | | | | | 280 | | | | | 285 |
| Met | His | Val | Met | Met | Tyr | Gly | Val | Tyr | Arg | Leu | Arg | Ala | Phe | Gly |
| | | | 290 | | | | | | 295 | | | | | 300 |
| His | Ile | Phe | Asn | Asp | Ala | Leu | Val | Phe | Leu | Pro | Pro | Asn | Gly | Ser |
| | | | 305 | | | | | | 310 | | | | | 315 |

Asp Asn Asp

<210> 342

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 342

tccccaagcc gttctagacg cgg 23

<210> 343

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 343

ctgggttcttc cttgcacg 18

<210> 344

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 344

gcccaaagtc cctaaggcgg tatacccc 28

<210> 345

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

bioRxiv preprint doi: <https://doi.org/10.1101/000000>; this version posted January 1, 2014. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

<223> Synthetic Oligonucleotide Probe

<400> 345

gggtgtgatg cttggaagca ttttctgtgc tttgatcact atgctaggac 50

<210> 346

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 346

gggatgcagg tgggtgtctca tgggg 25

<210> 347

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 347

ccctcatgta ccggctcc 18

<210> 348

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 348

ggattctaatac gactcact atagggtca gaaaagcgca acagagaa 48

<210> 349

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 349

ctatgaaatt aaccctcact aaagggtgt cttccatgcc aaccttc 47

<210> 350

<211> 48

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 350
ggattctaatac gactcact atagggcggc gatgtccact ggggctac 48

<210> 351
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 351
ctatgaaatt aaccctcact aaagggacga ggaagatggg cggatggt 48

<210> 352
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 352
ggattctaatac gactcact atagggcacc cacgcgtccg gctgctt 47

<210> 353
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 353
ctatgaaatt aaccctcact aaagggacgg gggacaccac ggaccaga 48

<210> 354
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 354
ggattctaatac gactcact atagggcttg ctgcggtttt tggtcctg 48

<210> 355
<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 355

ctatgaaatt aaccctcact aaaggagct gccgatccca ctggtatt 48

<210> 356

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 356

ggattctaatacgcactcact atagggcgga tcctggccgg cctctg 46

<210> 357

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 357

ctatgaaatt aaccctcact aaaggagcc cgggcatggt ctcagtta 48

<210> 358

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 358

ggattctaatacgcactcact atagggcggg aagatggcga ggaggag 47

<210> 359

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 359

ctatgaaatt aaccctcact aaaggacca aggccacaaa cggaaatc 48

<210> 360
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 360
ggattctaatac gactcact atagggtgt gctttcattc tgccagta 48

<210> 361
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 361
ctatgaaatt aaccctcact aaaggaggagg tacaattaag gggtaggat 48

<210> 362
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 362
ggattctaatac gactcact atagggcccg cctcgctcct gctcctg 47

<210> 363
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 363
ctatgaaatt aaccctcact aaaggaggga ttgccgcgac cctcacag 48

<210> 364
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 364

ggatttctaatac gactcact atagggcccc tctgccttc cctgtcc 47

<210> 365

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 365

ctatgaaatt aaccctcact aaaggaggatg gtggccgcga ttatctgc 48

<210> 366

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 366

ggatttctaatac gactcact atagggcgca gcatggcag cgatgagg 48

<210> 367

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 367

ctatgaaatt aaccctcact aaagggacag acggggcaga gggagtg 47

<210> 368

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 368

ggatttctaatac gactcact atagggccag gaggcgtgag gagaaac 47

<210> 369

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 369

ctatgaaatt aaccctcact aaagggaaag acatgtcatc gggagtgg 48

<210> 370

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 370

ggattctaatacgcactcact atagggccgg gtggagggtgg aacagaaa 48

<210> 371

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 371

ctatgaaatt aaccctcact aaagggacac agacagagcc ccatacgc 48

<210> 372

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 372

ggattctaatacgcactcact atagggccag ggaaatccgg atgtctc 47

<210> 373

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 373

ctatgaaatt aaccctcact aaagggagta aggggatgcc accgagta 48

<210> 374

<211> 47

<212> DNA

<213> Artificial Sequence

<223> Synthetic Oligonucleotide Probe

ggattctaatacgactcactatagggccagctacccgcaggaggagg 47

<211> 48

<213> Artificial Sequence

<223> Synthetic Oligonucleotide Probe

ctatgaaatt aaccctcact aaagggatcc caggtgatga ggtccaga 48

<211> 997

<213> Homo Sapien

cccacgcgtc cgatcttacc aacaaaacac tcctgaggag aaagaaagag 50

agggagggag agaaaaagag agagagagaa acaaaaaaac aaagagagag 100

aaaaaatgaa ttcattctaaa tcatctgaaa cacaatgcac agagagagga 150

tgcttctctt cccaaatggt cttatggact gttgctggga tccccatcct 200

atttctcagt gcctgtttca tcaccagatg tgttgtgaca tttcgcattct 250

ttcaaacctg tgatgagaaa aagtttcagc tacctgagaa tttcacagag 300

ctctcctgct acaattatgg atcaggttca gtcaagaatt gttgtccatt 350

gaactgggaa tatttttcaat ccagctgcta cttcttttct actgacacca 400

tttcctgggc gttaagttta aagaactgct cagccatggg ggctcacctg 450

gtgggttatca actcacagga ggagcaggaa ttcctttcct acaagaaacc 500

taaaatgaga gagtttttta ttggactgtc agaccagggtt gtcgagggtc 550

agtggcaatg ggtggacggc acacctttga caaagtctct gagcttctgg 600

gatgtagggg agcccaacaa catagctacc ctggaggact gtgccaccat 650

gagagactct tcaaacccaa ggcaaaattg gaatgatgta acctgtttcc 700

tcaattattt tcggatttgt gaaatggtag gaataaatcc tttgaacaaa 750


```
<210> 377
<211> 219
<212> PRT
<213> Homo Sapien
```

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Ser | Ser | Lys | Ser | Ser | Glu | Thr | Gln | Cys | Thr | Glu | Arg | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Cys | Phe | Ser | Ser | Gln | Met | Phe | Leu | Trp | Thr | Val | Ala | Gly | Ile | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ile | Leu | Phe | Leu | Ser | Ala | Cys | Phe | Ile | Thr | Arg | Cys | Val | Val | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Phe | Arg | Ile | Phe | Gln | Thr | Cys | Asp | Glu | Lys | Lys | Phe | Gln | Leu | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Asn | Phe | Thr | Glu | Leu | Ser | Cys | Tyr | Asn | Tyr | Gly | Ser | Gly | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Lys | Asn | Cys | Cys | Pro | Leu | Asn | Trp | Glu | Tyr | Phe | Gln | Ser | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Cys | Tyr | Phe | Phe | Ser | Thr | Asp | Thr | Ile | Ser | Trp | Ala | Leu | Ser | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Lys | Asn | Cys | Ser | Ala | Met | Gly | Ala | His | Leu | Val | Val | Ile | Asn | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gln | Glu | Glu | Gln | Glu | Phe | Leu | Ser | Tyr | Lys | Lys | Pro | Lys | Met | Arg |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Phe | Phe | Ile | Gly | Leu | Ser | Asp | Gln | Val | Val | Glu | Gly | Gln | Trp |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gln | Trp | Val | Asp | Gly | Thr | Pro | Leu | Thr | Lys | Ser | Leu | Ser | Phe | Trp |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asp | Val | Gly | Glu | Pro | Asn | Asn | Ile | Ala | Thr | Leu | Glu | Asp | Cys | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |

Thr Met Arg Asp Ser Ser Asn Pro Arg Gln Asn Trp Asn Asp Val
 185 190 195

Thr Cys Phe Leu Asn Tyr Phe Arg Ile Cys Glu Met Val Gly Ile
 200 205 210

Asn Pro Leu Asn Lys Gly Lys Ser Leu
 215

<210> 378

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 378

ttcagcttct gggatgtagg g 21

<210> 379

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 379

tattcctacc atttcacaaa tccg 24

<210> 380

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 380

ggaggactgt gccaccatga gagactcttc aaaccaagg caaaattgg 49

<210> 381

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 381

gcagattttg aggacagcca cctcca 26

<210> 382
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 382
ggccttgacg acaaccgt 18

<210> 383
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 383
cagactgagg gagatccgag a 21

<210> 384
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 384
cagctgccct tccccaacca 20

<210> 385
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 385
catcaagcgc ctctacca 18

<210> 386
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 386

cacaaactcg aactgcttct g 21

<210> 387

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 387

gggccatcac agctccct 18

<210> 388

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 388

gggatgtggt gaacacagaa ca 22

<210> 389

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 389

tgccagctgc atgctgccag tt 22

<210> 390

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 390

cagaaggatg tcccgtggaa 20

<210> 391

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 391

gccgctgtcc actgcag 17

<210> 392

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 392

gacggcatcc tcagggccac a 21

<210> 393

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 393

atgtcctcca tgcccacgcg 20

<210> 394

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 394

gagtgcgaca tcgagagctt 20

<210> 395

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 395

ccgcagcctc agtgatga 18

<210> 396

<211> 21

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 396
gaagagcaca gctgcagatc c 21

<210> 397
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 397
gaggtgtcct ggctttggta gt 22

<210> 398
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 398
cctctggcgc cccactcaa 20

<210> 399
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 399
ccaggagagc tggcgatg 18

<210> 400
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 400
gcaaattcag ggctcactag aga 23

<210> 401
<211> 29

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 401
cacagagcat ttgtccatca gcagttcag 29

<210> 402
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 402
ggcagagact tccagtcact ga 22

<210> 403
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 403
gccaaaggggtg gtgtagata gg 22

<210> 404
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 404
caggccccct tgatctgtac ccca 24

<210> 405
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 405
gggacgtgct tctacaagaa cag 23

<210> 406
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 406
caggcttaca atgttatgat cagaca 26

<210> 407
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 407
tattcagagt tttccattgg cagtgccagt t 31

<210> 408
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 408
tctacatcag cctctctgcg c 21

<210> 409
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 409
cgatcttctc caccaggag cgg 23

<210> 410
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 410

gccaggcctc acattcgt 18

<210> 411

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 411

ctccctgaat ggcagcctga gca 23

<210> 412

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 412

aggtgtttat taagggccta cgct 24

<210> 413

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 413

cagagcagag ggtgccttg 19

<210> 414

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 414

tggcggagtc ccctcttggc t 21

<210> 415

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 415

ccctgtttcc ctatgcatca ct 22

<210> 416

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 416

tcaacccctg accctttcct a 21

<210> 417

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 417

ggcaggggac aagccatctc tcct 24

<210> 418

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 418

gggactgaac tgccagcttc 20

<210> 419

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 419

gggccctaac ctcattacct tt 22

<210> 420

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 420

tgtctgcctc agccccagga agg 23

<210> 421

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 421

tctgtccacc atcttgcctt g 21

<210> 422

<211> 3554

<212> DNA

<213> Homo Sapien

<400> 422

gggactacaa gccgcgccgc gctgccgctg gcccctcagc aaccctcgac 50
atggcgctga ggcgccacc gcgactccgg ctctgcgctc ggctgcctga 100
cttcttctctg ctgctgcttt tcaggggctg cctgataggg gctgtaaatc 150
tcaaatccag caatcgaacc ccagtggtag aggaatttga aagtgtggaa 200
ctgtcttgca tcattacgga ttgcagaca agtgacccca ggatcgagt 250
gaagaaaatt caagatgaac aaaccacata tgtgtttttt gacaacaaaa 300
ttcagggaga cttggcgggt cgtgcagaaa tactggggaa gacatccctg 350
aagatctgga atgtgacacg gagagactca gccctttatc gctgtgaggt 400
cgttgctcga aatgaccgca aggaaattga tgagattgtg atcgagttaa 450
ctgtgcaagt gaagccagtg acccctgtct gtagagtgcc gaaggctgta 500
ccagtaggca agatggcaac actgcactgc caggagagtg agggccaccc 550
ccggcctcac tacagctggg atcgcaatga tgtaccactg cccacggatt 600
ccagagccaa tcccagattt cgcaattctt ctttccactt aaactctgaa 650
acaggcactt tgggtgttcac tgctgttcac aaggacgact ctgggcagta 700
ctactgcatt gcttccaatg acgcaggctc agccaggtgt gaggagcagg 750

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | |

| | | | | | |
|-------------|-------------|-------------|------------|-------------|------|
| aaatcagttt | gcattctcttc | aaaagaaacc | tctcaggtta | gctttgaact | 2100 |
| gcctcttcct | gagatgacta | ggacagtctg | taccagaggg | ccaccagaa | 2150 |
| gccctcagat | gtacatacac | agatgccagt | cagctcctgg | ggttgcgcca | 2200 |
| ggcgcccccg | ctctagctca | ctgttgccctc | gctgtctgcc | aggagggcct | 2250 |
| gccatccttg | ggccctggca | gtggctgtgt | cccagtgagc | tttactcacg | 2300 |
| tggcccttgc | ttcatccagc | acagctctca | ggtgggcact | gcagggacac | 2350 |
| tgggtgtcttc | catgtagcgt | cccagctttg | ggctcctgta | acagacctct | 2400 |
| ttttggttat | ggatggctca | caaaataggg | cccccaatgc | tatttttttt | 2450 |
| ttttaagttt | gtttaattat | ttgttaagat | tgtctaaggc | caaaggcaat | 2500 |
| tgcgaaatca | agtctgtcaa | gtacaataac | atttttaaaa | gaaaatggat | 2550 |
| cccactgttc | ctctttgcc | cagagaaagc | accagacgc | cacaggtctct | 2600 |
| gtcgcatttc | aaaacaaacc | atgatggagt | ggcgccaggt | ccagcctttt | 2650 |
| aaagaacgtc | aggtggagca | gccaggtgaa | aggcctggcg | gggaggaaag | 2700 |
| tgaaacgcct | gaatcaaaag | cagttttcta | attttgactt | taaatttttc | 2750 |
| atccgccgga | gacaactgctc | ccatttgctg | ggggacatta | gcaacatcac | 2800 |
| tcagaagcct | gtgttcttca | agagcaggtg | ttctcagcct | cacatgccct | 2850 |
| gccgtgctgg | actcaggact | gaagtgctgt | aaagcaagga | gctgctgaga | 2900 |
| aggagcactc | cactgtgtgc | ctggagaatg | gctctcacta | ctcaccttgt | 2950 |
| ctttcagctt | ccagtgtctt | gggtttttta | tactttgaca | gctttttttt | 3000 |
| aattgcatac | atgagactgt | gttgactttt | tttagttatg | tgaaacactt | 3050 |
| tgccgcaggc | cgcttggcag | aggcaggaaa | tgctccagca | gtggctcagt | 3100 |
| gtccctgggt | gtctgctgca | tggcatcctg | gatgcttagc | atgcaagttc | 3150 |
| cctccatcat | tgccaccttg | gtagagaggg | atggctcccc | accctcagcg | 3200 |
| ttggggattc | acgctccagc | ctccttcttg | gttgcatag | tgatagggta | 3250 |
| gccttattgc | ccctctttct | tataccctaa | aaccttctac | actagtgcc | 3300 |
| tgggaaccag | gtctgaaaaa | gtagagagaa | gtgaaagtag | agtctgggaa | 3350 |
| gtagctgcct | ataactgaga | ctagacggaa | aaggaatact | cgtgtatttt | 3400 |

aagatatgaa tgtgactcaa gactcgaggc cgatacgagg ctgtgattct 3450
gcctttggat ggatgttgct gtacacagat gctacagact tgtactaaca 3500
cacgtaatt tggcatttgt ttaacctcat ttataaaagc ttcaaaaaaa 3550
ccca 3554

<210> 423

<211> 310

<212> PRT

<213> Homo Sapien

<400> 423

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Leu | Arg | Arg | Pro | Pro | Arg | Leu | Arg | Leu | Cys | Ala | Arg | Leu | 1 | 5 | 10 | 15 |
| Pro | Asp | Phe | Phe | Leu | Leu | Leu | Leu | Phe | Arg | Gly | Cys | Leu | Ile | Gly | 20 | 25 | 30 | |
| Ala | Val | Asn | Leu | Lys | Ser | Ser | Asn | Arg | Thr | Pro | Val | Val | Gln | Glu | 35 | 40 | 45 | |
| Phe | Glu | Ser | Val | Glu | Leu | Ser | Cys | Ile | Ile | Thr | Asp | Ser | Gln | Thr | 50 | 55 | 60 | |
| Ser | Asp | Pro | Arg | Ile | Glu | Trp | Lys | Lys | Ile | Gln | Asp | Glu | Gln | Thr | 65 | 70 | 75 | |
| Thr | Tyr | Val | Phe | Phe | Asp | Asn | Lys | Ile | Gln | Gly | Asp | Leu | Ala | Gly | 80 | 85 | 90 | |
| Arg | Ala | Glu | Ile | Leu | Gly | Lys | Thr | Ser | Leu | Lys | Ile | Trp | Asn | Val | 95 | 100 | 105 | |
| Thr | Arg | Arg | Asp | Ser | Ala | Leu | Tyr | Arg | Cys | Glu | Val | Val | Ala | Arg | 110 | 115 | 120 | |
| Asn | Asp | Arg | Lys | Glu | Ile | Asp | Glu | Ile | Val | Ile | Glu | Leu | Thr | Val | 125 | 130 | 135 | |
| Gln | Val | Lys | Pro | Val | Thr | Pro | Val | Cys | Arg | Val | Pro | Lys | Ala | Val | 140 | 145 | 150 | |
| Pro | Val | Gly | Lys | Met | Ala | Thr | Leu | His | Cys | Gln | Glu | Ser | Glu | Gly | 155 | 160 | 165 | |
| His | Pro | Arg | Pro | His | Tyr | Ser | Trp | Tyr | Arg | Asn | Asp | Val | Pro | Leu | 170 | 175 | 180 | |
| Pro | Thr | Asp | Ser | Arg | Ala | Asn | Pro | Arg | Phe | Arg | Asn | Ser | Ser | Phe | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Asn | Ser | Glu | Thr | Gly | Thr | Leu | Val | Phe | Thr | Ala | Val | His |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Lys | Asp | Asp | Ser | Gly | Gln | Tyr | Tyr | Cys | Ile | Ala | Ser | Asn | Asp | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Ser | Ala | Arg | Cys | Glu | Glu | Gln | Glu | Met | Glu | Val | Tyr | Asp | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asn | Ile | Gly | Gly | Ile | Ile | Gly | Gly | Val | Leu | Val | Val | Leu | Ala | Val |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Leu | Ala | Leu | Ile | Thr | Leu | Gly | Ile | Cys | Cys | Ala | Tyr | Arg | Arg | Gly |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Tyr | Phe | Ile | Asn | Asn | Lys | Gln | Asp | Gly | Glu | Ser | Tyr | Lys | Asn | Pro |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Gly | Lys | Pro | Asp | Gly | Val | Asn | Tyr | Ile | Arg | Thr | Asp | Glu | Glu | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Asp | Phe | Arg | His | Lys | Ser | Ser | Phe | Val | Ile | | | | | |
| | | | | 305 | | | | | 310 | | | | | |

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100